# **King County Flood Control District**



2008 Annual Report





# King County Flood Control District 2008 Annual Report





Department of Natural Resources and Parks Water and Land Resources Division

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### INTRODUCTION AND BACKGROUND

In 2008, an unprecedented **24 flood protection projects were completed** under the new King County Flood Control District (District) – a workload that would have taken 17 years to complete at prior funding levels.

Prior to formation of the District, funding was available for only 2-3 projects per year. However, in the wake of Hurricane Katrina – one of the costliest and deadliest hurricanes in United States history – the government's role in protecting people and property in a natural disaster came sharply into focus.

In King County, we are proactively funding a regional approach to flood risk reduction and improving the county's nearly 500 aging and inadequate flood protection facilities.

In April 2007, the King County Flood Control District was created through Metropolitan King County Council Ordinance No. 15728 to provide a comprehensive and countywide approach to flood protection.

The purpose of the District is to protect public health and safety, regional economic centers, public and private properties, and major transportation corridors. The District is authorized to act to reduce flood risks throughout the county, including within King County cities.

King County is recognized as a national leader in progressive floodplain management practices through regulations, education and the King County Flood Warning Center. Even so, many of King County's levees and revetments are nearing the end of their useful life and do not function as originally designed decades ago.

The federal government has declared King County a federal disaster area eleven times since 1990 due to flood events, which highlights the urgent need to repair the county's aging flood protection infrastructure and proactively manage the county's river corridors to reduce flood risks.

King County has property valued at over \$7 billion within mapped floodplains, and flooding in the County has the potential to impact \$46 million per day in economic output and some 65,000 jobs.

The District will provide the necessary leadership and resources to support the ambitious effort to reduce flood risks countywide, protect public health and safety and ensure regional prosperity.

The purpose of this report is to provide the King County Flood Control District Board of Supervisors and the public with a report on the progress made on each element of the District's work program during its first full year of implementation. The report includes operating and capital program progress, revenues and expenditures for 2008, the 2009 budget, and project goals for 2009.

In 2008, an unprecedented 55 flood protection projects were initiated and 24 were completed. This work program would have taken 17 years to complete prior to formation of the King County Flood Control District.



### II. 2008 ACCOMPLISHMENT SUMMARY

The King County Flood Control District embarked upon the first year of its ten-year work program during 2008. The District's work program, guided by the 2006 King County Flood Hazard Management Plan, seeks to protect public safety and reduce flood risks countywide. Numerous operational and programmatic elements, as well as an ambitious capital work program, combine to assist the District in attaining its fundamental goals.

King County hired several new staff members during 2008 to support the enhanced body of work called for by the District. The combination of the District's efforts and of the service provided to the District by King County culminated in an extremely successful first year of implementation. As will be discussed in subsequent sections of this document, successes during 2008 include the following capital and operating program accomplishments.

### A. Capital Program

The District's 2008 work program included 55 capital projects, marking a significant increase from the 2-3 projects per year undertaken by the Water and Land Resources Division's River and Floodplain Management Section prior to the formation of the District.

Highlights of the 2008 capital work program include:

- Completed 24 capital projects, including highpriority repairs to flood facilities damaged in the November 2006 floods.
- Leveraged over \$23 million in federal funding to construct 9 high-priority flood repairs in partnership with the U.S. Army Corps of Engineers (Corps), completed during October-November 2008.
- Acquired 17 flood-prone properties, including the Cedar Grove Mobile Home Park, to support capital projects. Also acquired 119 easements and property interest on 136 additional parcels.

Projects were evaluated and prioritized based on:

- Potential consequences if no action is taken.
- Severity of flood and/or channel migration risk.
- Urgency or how quickly action needs to be taken to prevent increasing risk.

Prioritized projects are scheduled based on:

- Readiness to proceed.
- Opportunity for funding and partnerships.

### B. Operating Program

Floodplain mapping and technical studies, flood hazard education and community outreach, mitigation of flood-prone property, and grant writing are examples of the activities associated with the District's operating program.

Activities of this type were pursued aggressively during 2008, and highlights of these efforts include:

- Maintained King County's Class 2 status –
  the highest in the nation under the Community
  Rating System, resulting in up to a 40 percent
  reduction in flood insurance rates to residents of
  unincorporated King County.
- Leveraged over \$8 million in state and federal grants.
- Submitted five grants to purchase flood-prone property and elevate structures (\$6 million).
- Awarded two previously submitted grants to purchase or elevate flood-prone structures (\$2.2 million).
- Installed a **state-of-the-art**, **automated flood warning information phone system** to provide the public with 24-hour, real-time river safety information.
- Updated floodplain maps for the Lower Green and Middle Green cities in collaboration with the cities of Tukwila, Renton, Kent, and Auburn.
- Completed a preliminary White River flood hazard study in collaboration with the City of Pacific; scoped a flood hazard study for the Sammamish River; and scoped a coastal flood hazard study for Vashon-Maury Island.
- Conducted flood awareness and preparedness inter-agency coordination, training and public education outreach prior to the 2008-2009 flood season.





Construction of the Dykstra project on the Green River.

## King County 2008 Flood Control Zone District Projects Map



### III. OPERATING PROGRAM

Presented in this section are the 2008 King County Flood Control District operating program accomplishments. The operating program contains six main programmatic elements, and the highlights are summarized accordingly.

### A. Flood Preparedness, Regional Flood Warning Center and Post Flood Recovery Program

A crucial component of the District's operational work program is a comprehensive approach to preparing and educating citizens for flood events, coordinating regional flood warning center operations during flood events, and ensuring consistency across basins for post-flood recovery actions.

### Disaster Response Training

King County participated in the 2008 SoundShake Functional

Sound Shake '08

Catastrophic Regional Earthquake Exercise with the Washington State Emergency Management Division, Snohomish County, and the cities of Seattle and Bellevue. The exercise tested regional communications, emergency operations, public information dissemination, impact reporting and analysis, and resource allocation. Subsequent flood preparedness activities focused on documenting lessons learned during the *SoundShake* exercise and implementing improvements to flood warning communications protocols, such as redundant communications capability with the Army Corps of Engineers.

### Flood Response Coordination

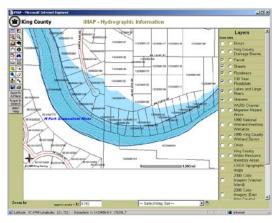
Annual preparations for flood season began in the summer and included: scheduling inter-agency meetings in each basin in October to coordinate flood preparedness and flood warning efforts with the Corps, Seattle Public Utilities, emergency response agencies, and local governments. Flood awareness brochures were mailed to each of the 6,000 residences in the incorporated and unincorporated floodplain areas of the county. The brochure encourages residents to get flood insurance and includes information on steps to take before, during, and after a flood; important emergency phone numbers; and a description of what to expect at each of the four flood warning phases on King County's major rivers. This information, along with real-time gage information, is available at www.kingcounty.gov/flood.

### Improved Technology

A major improvement to flood warning operations was the installation of an interactive voice response (IVR) phone message system to provide 24-hour, year-round, real-time river gage data to the public. The system frees up staff to focus on emergency response activities during flood events without needing to manually update recorded flood warning messages. This information is available at 206-296-8200. Work to further enhance flood warning communication with the addition of automated notifications also began in 2008.

### Flood Warning Information Line:

206-296-8200 or 800-945-9263. A major improvement to flood warning operations was the installation of a a state-of-the-art, automated flood warning information phone system to provide the public with 24-hour, real-time river safety information.



King County's iMAP Web site displays floodplain information.

The Flood Warning Center responded to the November 2008 flood event by opening for 79 hours of round-the-clock operations with 24-hour flood monitoring and patrol and coordination with emergency responders and local governments. The Flood Warning System Web pages were accessed 92,000 times by 40,000 users. The Flood Warning Hotline was accessed by over 2,000 users.

# **B.** Flood Hazard Studies, Mapping, and Technical Services Program

King County has a comprehensive program for conducting flood hazard studies, floodplain mapping, and other technical assessment. The purpose of these activities is to generate the technical information used to characterize, quantify, and delineate flood hazards, as well as to develop and implement strategies and actions to reduce risks related to flood and chan-

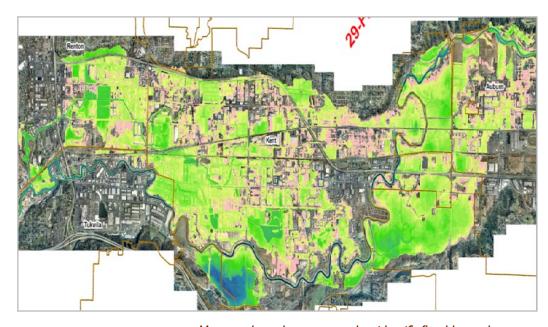
nel migration hazards. Flood hazard technical information types include hydrologic and hydraulic studies, flood and channel migration hazard maps, geologic studies, geographic information system (GIS) land use data, dam operations studies, risk assessments, and working maps for the flood hazard corridor.

In 2008, staff initiated two new flood hazard mapping studies. Private consultants have been contracted on both studies to collect new aerial

topography; conduct river and shoreline surveying; complete hydrologic and hydraulic analyses; and prepare flood hazard mapping and documentation. The analyses and mapping will be prepared in accordance with FEMA flood study guidelines so that this new hazard information can be used to update outdated flood insurance rate mapping. The new flood study for the Sammamish River would replace FEMA's river and land-use condition mapping from the late 1970s. Staff are collaborating with the four Sammamish River cities (Redmond, Woodinville, Kenmore and Bothell). Data collection began in March 2009 by obtaining new aerial photography of the river corridor. River channel survey work and technical analyses will be completed in the spring and summer of 2009. Draft flood boundary work maps are expected to be completed by early 2010. With completion of the Sammamish River flood study, King County will have updated floodplain maps for every major river in King County during the last 15 years.

With completion of the Sammamish River flood study, King County will have updated floodplain maps for every major county river in the last 15 years providing the most current information on flood risks and how to best assess them.

The other new flood study is a coastal flood hazard analysis for Puget Sound coastal areas of King County. The first phase of this work will be for the shoreline of Vashon-Maury Island. The analysis will be used to update the existing FEMA flood mapping for the



Maps such as these are used to identify flood hazard areas.

island's shoreline. The current FEMA mapping provides only an approximate location of shoreline flood hazards. The new study will apply state-of-the-art methods per FEMA guidelines, to develop estimates of water surface elevations reflecting wind and wave conditions. In addition to completing the FEMA-based coastal flood hazard mapping, the study methods will be applied using a sea-level rise scenario to examine future flood conditions around the shoreline of the Vashon-Maury Island. With the collaboration and concurrence of cities along the marine shoreline of the incorporated portions of King County, the coastal flood analysis could be expanded as a second phase of the study and would result in FEMA hazard mapping along these developed shoreline areas.

In addition to these new studies, staff are monitoring FEMA's review of the technical appeals submitted by King County and the four Green River valley cities for the Lower and Middle Green River. The County and Cities submitted appeals of FEMA's Preliminary flood study and mapping for the Lower and Middle Green River areas in March 2008. The County and Cities agreed that the Preliminary FEMA mapping was technically incorrect because levee failure analyses were not conducted to adequately analyze the extent of flooding. King County obtained funding from the Washington State Department of Ecology (DOE) and coordinated all aspects of the new analyses with the cities of Auburn, Tukwila, Kent, and Renton to generate a new flood hazard analyses and submit the information to FEMA as an appeal of the preliminary flood insurance rate maps and study. FEMA intended to complete their review of the appeals by March 2009 and publish the effective map by September 2009. However, delays in FEMA's review will delay publication of the final maps to 2010.

Other mapping activities for 2008 included the development of draft flood boundary work maps and a study for two reaches of the White River. The draft flood study and mapping for the lower reach extends from the county line and includes the Cities of Pacific and Auburn. The upper reach includes new draft mapping from State Route 410 near the City of Enumclaw and extends up to Mud Mountain Dam. The draft work maps and studies are expected to be provided to FEMA by late spring 2009 to update the flood insurance rate maps and studies for these areas.



Ongoing removal of invasive weeds.

### C. Flood Hazard Planning and Grants, Repetitive Loss Mitigation, and Public Outreach

# Community Rating System (CRS) Flood Insurance Discounts

The District participates in planning and regulatory processes to ensure coordination between the 2006 Flood Plan recommendations and the King County Comprehensive Plan, King County Regional Multi-Hazard Mitigation Plan, and planning efforts by other jurisdictions. A major element of King County's floodplain planning effort is participation in the National Flood Insurance Program's Community Rating System (CRS). Through CRS, FEMA recognizes communities that go beyond the federal government's minimum requirements for floodplain management.

In 2007, unincorporated King County was upgraded from a Class 3 to a Class 2 community, and is the highest rated county in the United States.

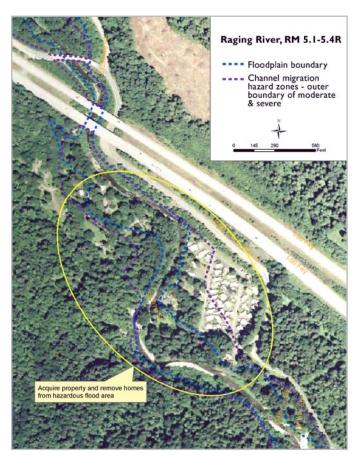
As a result of this rating, flood insurance policy holders in unincorporated King County receive up to a 40 percent discount on annual flood insurance premium costs, which saves the average policy holder \$410 annually.

King County is the highest rated county in the country by FEMA for floodplain management. As a result, residents of unincorporated King County save up to 40% on their flood insurance premiums — saving the average policy holder \$410 annually.

During the third quarter of 2008, staff prepared and submitted the annual recertification report required to document and maintain King County's Class 2 status. King County's submittal was approved, ensuring that the flood insurance benefits of King County's Class 2 status will continue for another year.

A key element of the CRS program is the provision of public information about flooding. During September, King County facilitated the annual public information strategy meeting with emergency preparedness staff from 17 different agencies throughout the County. Every city affected by flooding was invited. The purpose of the meeting is to share information and identify opportunities for collaboration which would increase public awareness of flood hazards and actions to reduce risk.

Cities can benefit from the planning, assessment, and outreach activities conducted by King County through the CRS program. During the third quarter, staff provided a presentation to each of the District's Basin Technical Committees describing ways in which cities can benefit and offered to conduct a more detailed workshop in 2009.



Alpine Manor Mobile Home Park Neighborhood Buyout Project Location on the Raging River.

The City of Kent recently entered into the CRS program, providing a good example of the ways in which cities can benefit from the County's activities. Kent expects to receive a Class 5 rating, which would result in a 25 percent discount in annual flood insurance premiums to Kent residents. In elevating Kent, over 70 percent of the points received were directly tied to floodplain management activities implemented by King County.

### Policy and Planning

Building on the efforts of 2007, several changes to King County's floodplain codes and regulations came about in 2008 as recommended by the Snoqualmie Flood-Farm Task Force. The Task Force met between October 2007 and January 2008 to discuss measures to address the impacts of flooding on agriculture in the Snoqualmie Agricultural Production District, and the final report of the Task Force was transmitted by the King County Executive to the King County Council on February 1, 2008. Key findings included an overlap between flood hazards and agricultural production districts and the importance of maintaining floodplain management practices and regulations that have no adverse impact on other floodplain residents.

Two key recommendations resulting from the Flood-Farm Task Force are:

- 1) the establishment of an accounting tool to track placement and removal of fill material in the floodplain to provide flexibility in meeting the County's compensatory storage requirements; and
- 2) financial assistance in the amount of \$100,000 per year from the King County Flood Control District to support flood mitigation projects related to agriculture. Amendments to the King County Code were also approved by the Council, and these code changes provide greater flexibility for development proposals in all of King County's Agricultural Production Districts.

A significant event in 2008, was the issuance of a biological opinion on the implementation of FEMA's National Flood Insurance Program (NFIP). The final biological opinion was issued on September 22, 2008, by the Northwest Region of the National Marine Fisheries Service (NMFS), and this document explores the effect of the NFIP on species of Puget Sound salmon and killer whales listed under the federal Endangered Species Act (ESA). (The opinion was issued following a formal consultation between NMFS and FEMA pursuant to Section 7 of the ESA and consistent with judicial order in *NWF v. FEMA*.)



Elevated homes in the Kimball Creek neighborhood.

The main focus of the biological opinion is whether activities conducted under the NFIP are likely to jeopardize the survival or recovery of ESA-listed species in the Puget Sound region or adversely impact the critical habitat of these species. The opinion determines that the NFIP does, in fact, directly and indirectly promote alterations to the floodplain that lead to floodplain development, which has numerous detrimental effects to habitat and habitat forming processes and, ultimately, to listed species of salmon and killer whales.

King County's floodplain management activities exceed FEMA's minimum NFIP requirements, and are therefore likely to cause less harm to listed species.

Notably, however, the biological opinion recognizes that King County's floodplain management activities exceed FEMA's minimum NFIP requirements, and are therefore likely to cause less harm to listed species. In recognition of King County's efforts to enact and enforce enhanced floodplain management regulations, the biological opinion includes less stringent compliance requirements for King County than for many other jurisdictions in the Puget Sound region. Moving forward, King County staff are coordinating with FEMA to understand how FEMA plans to respond to the biological opinion and to provide a local government perspective on the potential impacts of changes to the NFIP.

### Grant Applications for Federal Funds

In September 2008, King County was awarded a \$763,845 FEMA grant to buy out and remove three residential structures along the Raging River. One acquisition has been completed and negotiations are proceeding with the neighboring landowners. This grant leverages the Alpine Manor Mobile Home Park Neighborhood Buyout capital project (FL4001).

King County has been awarded grants totaling \$8 million, and received a total of \$3.3 million in grant revenue during 2008 for flood protection and mitigation activities.

King County was also notified in 2008 that \$1,446,000 in project costs will be awarded to elevate 9 homes in the Shamrock Park neighborhood near the City of North Bend. Construction of these elevation projects will begin when the final award has been completed.

Throughout the year, staff submitted several FEMA grant applications to fund the purchase of flood-prone property and the elevation of flood-prone structures. One grant application was submitted for reconsideration on January 11, 2008 under the Pre-Disaster Mitigation Grant Program:

• \$2,295,560 project cost to buy six properties from willing sellers along the Cedar River at Elliott Bridge.

Two grants were submitted to the Hazard Mitigation Grant Program (DR-1734) on June 30, 2008, including:

- \$1,310,620 project cost to buy out and demolish three homes from willing landowners in the Cedar, Snoqualmie, and South Fork Skykomish basins; and
- \$1,449,750 project costs to elevate 11 flood prone structures in the Kimball Creek area of the Snoqualmie basin and to elevate 4 structures in the lower Snoqualmie basin.

On December 1, 2008, staff submitted two additional FEMA grant applications for consideration under the Pre-Disaster Mitigation Program. Both applications were recommended to FEMA for funding by the Washington State Emergency Management Division in mid-December, and final funding decisions for these applications are expected by June 2009. These applications include:



Cedar Rapids levee setback reconnects 35 acres of floodplain to reduce flood risks to neighboring homes.

- \$670,639 project costs for the acquisition of two repetitively-flooded properties in the Fall City area of the Snoqualmie basin; and
- \$297,199 project costs for the elevation of four structures in the Snoqualmie and South Fork Skykomish River basins.

In total, King County staff managed 16 different flood risk reduction grants and partnerships from a variety of sources, including FEMA, the Washington State Department of Ecology, Real Estate Excise Tax, the U.S. Army Corps of Engineers, the Conservation Futures Trust, and the Washington State Recreation and Conservation Office.

# D. King County Flood Control District Implementation

This work program element includes coordination and facilitation of the committees supporting the overall work program of the District. This includes staff support for capital program implementation, as well as coordination with other agencies to construct several projects.

King County staff organized and facilitated interjurisdictional meetings of the four Basin Technical Committees, as well as numerous meetings of the District's Advisory Committee during 2008. As requested by the Board of Supervisors, the Advisory Committee used these meetings to discuss and make recommendations on the Sub-Regional Opportunity Fund, the 2009 work program, and the 2009 budget,

as well as to review progress implementing the 2008 work program. Recommendations from the Advisory Committee were submitted to the Board on August 2008.

At the request of the King County Council, staff prepared the "Report Addressing Public Safety in the Placement of Large Wood in King County Waterways," transmitted in March 2008. King County staff convened a stakeholder group of recreational boaters, conservation organizations, and agency staff to review and comment on procedural standards and design guidelines for the placement of large wood in waterways. Presentations on the recommendations were made to several interested stakeholder groups such as the WRIA Forums and the Cedar River Council. This report was presented to the King County Council Growth Management and Natural Resources Committee in June 2008.

Staff also supported the Board of Supervisors' staff in organizing a press event during the summer construction season at the Kent Shops-Narita levee construction site adjacent to the Riverbend Golf Course in Kent. This event was well attended by local elected officials and the media, resulting in favorable coverage on each local television network as well as multiple newspapers.

# E. Resource Management, Annual Maintenance, and Facility Assessment Program

This work program element involves various resource management activities, including non-structural activities to support capital project construction. For example, re-vegetation, irrigation, and construction site restoration, as well as scheduling crews and obtaining materials to support these activities. Work in this category also includes facility coordination and property maintenance for the District's 500 flood protection facilities (covering 119 linear miles), as well as maintenance of approximately 430 acres of land acquired for flood mitigation purposes.

### Black River Pump Station

A noteworthy facility improvement project in 2008 was the Black River Pump Station. The Black River Pump Station was built in 1972 just upstream from the confluence of the Black and Duwamish Rivers to address backwater flooding along Springbrook Creek. The Black River Pump Station is a critical part of the overall flood protection infrastructure for the lower Green River valley. If not operating at full capacity, the floodplain is actually larger than what is mapped and can therefore create greater flood and additional flood insurance burdens.

King County staff completed sediment sampling in the forebay of the Black River Pump Station during the first quarter, and a pilot sediment removal project was conducted in August 2008. The pilot project removed approximately 1,500 cubic yards of sediment immediately adjacent to the primary pump inlet, and data gathered through the pilot project will be used to help develop a long-term sediment management program for the channel. In addition, staff are working with the Wastewater Treatment Division in the Department of Natural Resources and Parks to evaluate the need to replace fish screens at the pump station.

### Cedar Grove Mobile Home Park

Another major project was the ongoing management of the Cedar Grove Mobile Home Park. Following the completion of the mobile home park acquisition in the second quarter, King County staff provided a wide range of site management for the 41 families living in the park, which will continue until relocation efforts can be completed (anticipated completion date of 2010). Management activities included the following:

- Removal and asbestos abatement of empty trailers;
- Removal of hazardous abandoned trailer tie-downs;
- Two days of garbage removal (including some appliances);
- Lawn mowing and general maintenance;
- Installation of gates/bollards to cut off inappropriate access to the back of the property and river;
   and
- Installation of additional speed bumps.

Key public safety measures conducted in 2008 included the removal of three natural hazards from area rivers and coordination with the King County Sheriff's Office to close the Cedar and Green Rivers during high flows in May.



Black River pump station in the Lower Green River valley.



### IV. CAPITAL PROGRAM

### 2008 King County Flood Control District Capital Project Status Summary

Basin	Construction/ Implementation Completed	In Progress/Design- Completion for 2009+	Total Projects in Basin
Snoqualmie/South Fork Skykomish	12	17	29
Cedar/Sammamish	4	7	П
Green/Duwamish	7	4	П
White	I	3	4
Total	24	31	55

Projects proposed in the District's capital program help protect public health and safety and critical public infrastructure from flooding, erosion, and rapid channel migration. A detailed description of flood hazard management conditions and objectives for each major river system is available in the 2006 King County Flood Hazard Management Plan, which serves as the District's Comprehensive Plan.

During 2008 King County entered into cooperative agreements with the U.S. Army Corps of Engineers through the PL 84-99 Emergency Assistance Program to repair ten levees in the Green and Snoqualmie River basins that were damaged during the November 2006 floods. This partnership included repairs to two federal levees along the Green River, with full funding of construction costs by the Corps. For non-federal levees, 80% of construction costs are funded by the Corps. Due to federal funding limitations, the Horseshoe Bend 205 repairs on the Green River were deferred until 2009. The remaining nine emergency repairs were completed during 2008. Overall, approximately \$7 million in District funds for these critical flood damage repairs leveraged over \$23 million in federal funding.

The District's capital program strives to achieve the following flood hazard management objectives:

- Repair, rehabilitate, and improve flood facility protection;
- Reduce hazards by removing flood, erosion, and landslide prone residential structures;
- Improve flood water conveyance and capacity; and
- Provide safe access to homes and businesses by protecting key transportation routes.

Capital projects are reviewed by Basin Technical Committees, comprised of public works staff from jurisdictions throughout King County.

Recommendations are then made to the elected officials of the Advisory Committee and, later, to the Board of Supervisors (Appendix C). Projects are evaluated and prioritized based on the following criteria and policies identified in the 2006 Flood Plan.

- Severity of flood and/or channel migration risk.
- Consequences if no action is taken to reduce flood risk.
- Urgency a measure of how quickly an action needs to be taken in order to prevent a risk from growing worse.

- Opportunity including the availability of funding and collaborative partnerships to reduce flood risks and potentially support multiple floodplain objectives.
- Readiness to proceed, including any outstanding property ownership issues.

# A. 2008 Capital Improvement Program Implementation

The District's 2008 capital program included 55 capital projects, which marks a significant increase from the 2-3 projects per year undertaken by the Water and Land Resources Division's River and Floodplain Management Unit before the District was established. Of these 55 projects, 24 were completed during 2008. Without the District's leadership and dedicated funding, these 24 projects would have taken nearly 17 years to complete. The 2008 project list (see Appendix A), included the following work:

- Immediate flood damage repair;
- Levee rehabilitation and reconstruction;
- Acquisitions to reduce flood risk;
- · Elevations to minimize flood risk; and
- · Technical studies.

Successes of the capital program include the following:

- Completion of 12 repair projects to flood protection facilities damaged during the November 2006 floods.
- Construction of 9 additional high-priority flood repairs in partnership with the Corps.
- Leveraging over \$23 million in federal funding to repair levees damaged in the November 2006 floods.
- Certification of ownership on 216 parcels in support of Corps repair projects and acquisition of property interests to support capital projects on 136 parcels (17 fee simple acquisitions and 119 easements).

Project highlights from the 2008 summer construction season:

 Kent Shops-Narita and Myer's Golf Levee Rehabilitations: In partnership with the Corps and City of Kent, these flood damage repair projects protect the commercial centers and infrastructure in the lower Green River valley. Over 5,200 feet of levee damaged in November 2006 flood was



Kent Shops-Narita levee rehabilitation completed ahead of schedule in collaboration with the U.S.Army Corps of Engineers.

repaired, and construction crews worked six days per week and 16 hours per day to complete this project before the close of the permitting "fish window" in mid-November.

- Galli's and Dykstra Levee Rehabilitations: In partnership with the Corps and City of Auburn, these flood damage repair projects protect residential areas of the City of Auburn by repairing over 1,700 feet of levee damaged in the November 2006 flood.
- South Fork Snoqualmie Levee System Rehabilitation: Repaired eight sinkholes as part of preliminary work to rehabilitate over five miles of levees that protect residential and commercial areas of North Bend.
- Completion of 11 flood damage repairs in the Snoqualmie Basin, protecting residential areas and transportation corridors.

Revisions to capital project scope, schedules, and budget:

Approval of a \$3.5 million supplemental budget request (FCD2008-11) on September 29, 2008 to accelerate work on the Kent Shops and Narita Levees (FL8011) in partnership with the Corps. The Narita Levee was originally proposed as a 2009 project, and was moved forward as a result of the partnership with the Corps under the Public Law 84-99 Emergency Response and Recovery Program. Both projects were originally scoped as multi-year projects but were completed during 2008 because of the additional resources made available by the Corps and the District.

- Two proposed buyouts of flood-prone homes along the South Fork Skykomish were proposed for re-sequencing. The 2008 capital project list approved by the Board of Supervisors includes the Miller River Floodplain Buyout (FL0001). However, the owner of the structures proposed for buyout and removal withdrew the properties from the market, removing the ability to implement the project. At the same time, the urgency of buyouts proposed in the Timberlane Village area (FL0004) increased as a result of high flows during May 2008, which led to erosion of the riverbank near residential homes. King County initiated negotiations with three willing sellers in this area, and the sale of these properties closed in the beginning of 2009.
- Delay of the Foster Golf Revetment and Tukwila 205 Tree Cutting Mitigation (FL8008) until 2009. This project is environmental mitigation for vegetation removed in compliance with the Corps' PL 84-99 program. The Corps is now requiring a biological assessment of the proposed habitat mitigation to ensure that the mitigation activities comply with the Endangered Species Act.

### **B.** Sub-Regional Opportunity Fund

In a resolution approving the District's 2008 annual work program and budget, the Board of Supervisors allocated 10 percent of the Flood District's total revenue for a Sub-Regional Opportunity Fund. In essence, this fund was created to provide revenue directly to King County jurisdictions to allow them flexibility in funding high priority flood or stormwater projects at a local scale.

Consistent with the Advisory Committee's recommendation, opportunity funds are distributed to each jurisdiction proportional to assessed valuation, and funds can be used for any activity that is consistent with King County Code and the state statute that authorizes Flood Districts. Eligible activities include flood control, stormwater control, or cooperative watershed management projects, including habitat restoration. Watershed management projects, per Board resolution, must be linked to the construction of a flood or stormwater project in order to be eligible.

Applications for sub-regional projects were distributed to each King County jurisdiction during 2008 for project requests or deferrals, and jurisdictions submitted projects that focused primarily on culverts and stream channel improvements intended to reduce stormwater drainage and water quality problems. The

Opportunity Fund will allow jurisdictions to leverage their own funds with those of the Flood District, leading to implementation of numerous projects countywide that might not otherwise be possible in the absence of the District's contributions.

# King County Subregional Opportunity Fund Summary

Jurisdiction	2008 & 2009 Combined Opportunity Fund Allocation Amount	Project Name	Project Description
Algona*	\$10,444	N/A	Accrual of funds for future year.
Auburn	\$139,186	Mill Creek Culvert Replacement	Replace culverts to improve stormwater flow, fish passage, and roadway security.
Beaux Arts*	\$2,700	N/A	Accrual of funds for future year.
Bellevue	\$605,318	SE 30th Street/Sunset Creek Improvement	Replace culvert and stabilize banks using bioengineering; net effect will improve conveyance and public safety and will enhance Chinook habitat.
Black Diamond	\$12,922	N/A	Accrual of funds for future year.
Bothell	\$54,201	228th Street/19th Culvert Replacement	Replace existing culverts to enhance stormwater conveyance and fish passage.
Burien	\$83,303	N/A	Accrual of funds for future year.
Carnation	\$4,551	SR-203/Tolt Avenue Storm System Improvements	Improve infiltration systems to reduce flooding at major intersections.
Clyde Hill	\$36,404	Clyde Hill Stormwater Management Project	Develop stormwater regulations for new development that comply with Federal, State, and regional requirements.
Covington	\$41,458	Wood Creek Detention Pond Conversion	Design and reconstruct detention pond to improve function and water quality. Will entail use of LID throughout site, serving as a demonstration project.
Des Moines	\$58,349	Des Moines Creek Flood Mitigation Project	Widen lower channel of Des Moines Creek at Des Moines Creek Beach Park and construct floodwall to improve flood protection.
Duvall	\$17,836	Carrie Ray Division I Storm Pond Improvements	Improve existing stormwater pond by increasing volume and installing flood control structures to regulate discharge, which will reduce peak flows and erosion.
Enumclaw	\$22,463	N/A	Accrual of funds for future year.
Federal Way	\$181,962	Easter Lake Stormwater and Flood Control Improvements	Replace undersized culverts to improve stormwater conveyance, reduce risk of flooding to Easter Lake shoreline, and reduce nearby roadway flooding.
Hunts Point	\$17,385	N/A	Accrual of funds for future year.
Issaquah	\$106,473	Floodplain Property Acquisitions	Acquire flood-prone properties and maintain land as permanent open space.
Kenmore	\$60,490	N/A	Accrual of funds for future year.
Kent	\$212,224	Horseshoe Bend Levee Project	Conduct preliminary design and property acquistions to support Horseshoe Bend Levee Setback (which ties in to Nursing Home Levee).

# King County Subregional Opportunity Fund Summary, Continued

Jurisdiction	2008 & 2009 Combined Opportunity Fund Allocation Amount	Project Name	Project Description
Kenmore	\$60,490	N/A	Accrual of funds for future year.
Kent	\$212,224	Horseshoe Bend Levee Project	Conduct preliminary design and property acquistions to support Horseshoe Bend Levee Setback (which ties in to Nursing Home Levee).
King County	\$1,090,142	Stormwater facility retrofits; neighborhood drainage assistance projects; May Creek Drainage, Habitat Restoration and Ravine Stabilization; Mullen Slough; Juanita Creek Bacteria Source Investigation Project	Improve flow control and water quality associated with drainage problems through facility retrofits and neighborhood drainage assistance projects. May Creek - feasibility study, project design, and project construction to reduce flooding, increase conveyance, and reduce sedimentation. Mullen Slough - feasibility study and hydraulic analyses to determine conveyance capacity problems and identify capital improvements to reduce flooding problems. Juanita Creek - Analyze data and make recommendations on projects to reduce pollution in Juanita Creek.
Kirkland	\$200,473	I22nd Avenue NE LID Stormwater Facilities	Design and construct LID facilities for Lake Washington High School redevelopment to reduce flooding and improve water quality.
Lake Forest Park	\$47,551	Town Center Nature Park	Property acquisition and removal of a structure to support a rain garden and otherwise increase storage capacity for nearby stream.
Maple Valley	\$49,602	N/A	Accrual of funds for future year.
Medina	\$60,516	Medina Park Stormwater Pond Improvements	Construct outlet control improvements to allow for greater runoff storage and metered discharge to match downstream channel capacity, thus limiting flooding.
Mercer Island	\$194,479	N/A	Accrual of funds for future year.
Milton	\$1,803	N/A	Accrual of funds for future year.
Newcastle	\$43,755	Landcastle Sinkhole & Stormwater Conveyance System Restoration	Replace damaged and congested stormwater pipes to improve stormwater conveyance and reduce flooding.
Normandy Park	\$29,322	N/A	Accrual of funds for future year.
North Bend	\$15,561	N/A	Accrual of funds for future year.
Pacific	\$10,040	N/A	Accrual of funds for future year.
Redmond	\$236,654	Lower Bear Creek Rehabilitation	Construct new channel with broader floodplain and seasonally-flooded wetlands and improve channel capacity by removing fill soils.

# King County Subregional Opportunity Fund Summary, Continued

Jurisdiction	2008 & 2009 Combined Opportunity Fund Allocation Amount	Project Name	Project Description
Renton	\$214,824	Cedar River Gravel Removal Project (Spawning Channel Replacement)	Construct groundwater spawing channel to support future maintenance dredging on the lower Cedar River.
Sammamish	\$189,343	Ebright Creek and George Davis Creek Drainage Basin Planning	Conduct drainage basin planning effort for Ebright Creek and George Davis Creek (Thompson and Engelwood Sub-basins) to identify future stormwater improvement projects.
Seatac	\$89,120	Sunrise View Addition Bypass Pipeline Project	Construct a series of catch basins and install pipes to convey excessive stormwater flows that flood Sunrise View neighborhood.
Seattle	\$2,350,151	Thornton Creek Confluence Floodplain Restoration	Restore creek to a more natural channel and restore floodplain and riparian vegetation, all of which will enhance floodplain storage and limit high flows.
Shoreline	\$154,890	Meridian Wetland Enhancement Project	Conduct a feasibility study and design a project to restore wetland function, improve downstream conveyance, and reduce flooding to private property.
Skykomish	\$500	N/A	Accrual of funds for future year.
Snoqualmie	\$32,729	Sandy Cove Riverbank Feasibility Study	Feasibility study to determine if a flood protection project would benefit Sandy Cove Park and local businesses in the area.
Tukwila	\$87,823	2009 Small Drainage Project	Replace two culverts to improve stormwater conveyance alleviate upstream flooding.Will also allow for improved fish passage.
Woodinville	\$50,949	Sammamish River Outfall - NE 175th St at Wilmot Gateway Park	Design and construct stormwater outfall to increase capacity.
Yarrow Point	\$17,403	NE 47th Street Storm Drainage Improvement Project	Upsize the stormwater system to convey runoff and reduce flooding and erosion.
Total	\$6,835,299		
Portion of Total Accrued until 2010	\$511,014		

Note: An asterisk (\*) indicates the jurisdiction did not return an application. We then assume the jurisdiction wishes to accrue funds for a future year.



### V. 2009 GOALS

### A. Proposed Projects

The District's 2009 work program continues a comprehensive effort to identify, assess, and reduce public safety risks from flooding and channel migration throughout King County. Capital projects proposed for the 2009 work program continue to address high priority flood risk reduction needs through acquisition and removal of floodprone structures throughout King County and rehabilitation of flood protection facilities. While the 2008 capital program included a number of flood damage repairs from the 2006 flood, the 2009 capital program currently includes several large-scale, multi-year flood facility rehabilitations. Of the 55 projects initiated in 2008, 31 continue in 2009 and 20 new projects will be initiated in 2009.

For the lower Green, the 2009 work program uses a phased approach to levee rehabilitation beginning with acquisition of rights-of-way and initiating design and permits in 2009, followed by the construction of levee setbacks, flood benches, and finally in-water work to reconstruct the toe of the levee. Based on the results of real estate negotiations during 2009, projects on the Lower Green River may need to be re-sequenced for 2010. From a flood risk reduction perspective, however, it is important to note that levee rehabilitations will need to proceed on both banks of the lower Green and the work program currently assumes the first phase of construction (setback of the levee) will occur in 2010 for each of these projects. Because of the reduced flood control capacity of the Howard Hanson Dam, it is essential that sufficient right-of-way be obtained to expeditiously set back levees along the lower Green River.

In the Cedar-Sammamish basin, the objective is to focus on two types of activities:

- Reducing flood velocities and volumes that threaten critical public infrastructure (SR-169, regional fiber-optic lines, and the Cedar River Trail), residential dwellings, and limit access for residents and first-responders.
- 2) Reducing public safety risks associated with neighborhood-scale flooding and channel migration.

The first objective is addressed through a series of projects that acquire flood-prone structures and setback or remove levees to increase the flood storage and conveyance capacity of the Cedar River.

The Cedar Grove Mobile Home Park Acquisition and Relocation project implemented in 2008 is an example of a large-scale buyout that, combined with other buyouts in this reach, enable levee setbacks to proceed



Herzman levee setback project will reconnect Cedar River to its former floodplain and reduce risks to SR-169.

(for example, the Rainbow Bend Levee Setback and the Elliot Bridge Levee Setback projects, which were also initiated in 2008).

Implementing both the Herzmann and Jan Road levee setback projects on the Cedar River is proposed for 2009. These projects require easements rather than acquisition of multiple parcels, and can readily proceed to construction. Acquisitions related to future capital projects will also be pursued as opportunities arise.

The second objective is addressed through two projects that evaluate hazard mitigation alternatives in high-risk neighborhoods. The first, in the Dorre Don and Byers Bend neighborhoods, will evaluate hazard mitigation alternatives in a frequently flooded residential neighborhood where existing levees are regularly overtopped. The Maplewood neighborhood faces a different hazard, as it is across the river from a land-slide hazard area that could cause the river to abruptly change course into the residential area. Based on the results of these hazard mitigation alternatives analyses, structural and non-structural solutions will be proposed to reduce the risks facing these neighborhoods.

# Snoqualmie, Tolt, Raging, and South Fork Skykomish Rivers

The flood risk reduction strategy in the Snoqualmie basin is to strengthen and rehabilitate flood containment facilities while using non-structural solutions (elevations and buyouts) to reduce or eliminate risks. During 2009 work will continue on the South Fork Snoqualmie Levee System Improvements and the North Bend Area Residential Flood Mitigation projects, and work will be initiated on the Middle Fork Levee System Capacity Improvements to reduce channel constrictions that exacerbate flooding in and around North Bend.

The 2009 work program also includes the buyout of a home in the City of Snoqualmie to complement the City's efforts to reduce flood risks along a frequently-flooded section of Railroad Avenue SE (City of Snoqualmie Natural Area Acquisition). Additional flood hazard mitigation efforts are scheduled in this area of Snoqualmie in 2014 to align with the City's flood risk reduction and downtown redevelopment efforts.

On the Tolt River, the 2009 work program includes a proposed buyout and levee removal in the Sans Souci neighborhood, where seven homes are at risk of flooding, erosion, and rapid channel migration. In addition, the Lower Tolt River Acquisition is proposed to maintain and enhance our ability to setback the

Frew levee in this reach within the City of Carnation where the existing levee and berm are frequently overtopped. Work will also continue on the Tolt River Supplemental Study, a 2008 project to evaluate the combined flood risk reduction effects of levee setback projects proposed on the Tolt River. Study results will be used to help sequence and design levee setback projects currently sequenced later within the 6-year CIP.

The 2009 work program also includes buyout and removal of several residential structures in and around the Alpine Manor Mobile Home Park on the Raging River. This area is within a severe channel migration hazard area, and poses a high risk to residents.



Cedar Grove Flooding in 1990.

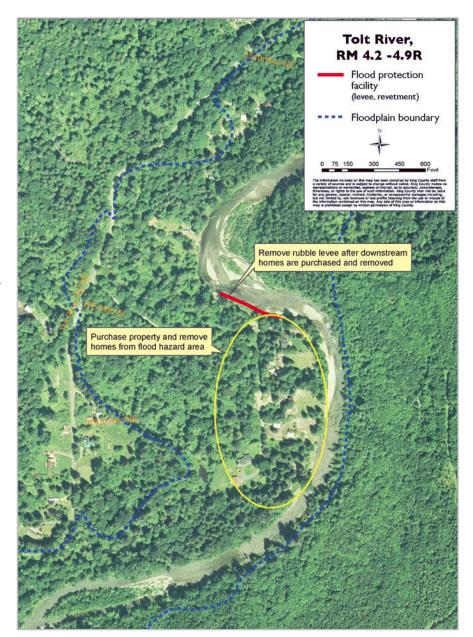


Cedar Grove Flooding in 2009. Vacated lands safely convey floodwaters adjacent to Cedar Grove Road.

On the South Fork Skykomish, the 2009 work program includes completion of projects initiated in 2008 to protect a section of the Old Cascade Highway on the Miller River that is threatened by channel migration, as well as buyout of at-risk structures in the Timberlane Village neighborhood.

### White River

For the White River basin, the capital program will focus on the Countyline to A Street levee setback project, along with buyouts of residential structures at high risk of flooding and channel migration (White-Greenwater and Red Creek Acquisitions). No new projects are currently proposed on the White during 2009, although additional projects may be evaluated in response to the January 2009 flooding.



The San Souci neighborhood buyout project will acquire flood-prone properties on the Tolt River. Access to the neighborhood is frequently cut off by flood waters.

## King County 2009 Flood Control Zone District Projects Map



### VI. 2009 FIRST QUARTER SUMMARY

The January 2009, presidentially-declared flood disaster drove King County's activities during the first quarter of 2009. The floods of January 6-10 were caused by a pineapple express that brought up to 22 inches of rain in the Cascade mountain headwaters of King County's major rivers and the snowmelt and saturated ground conditions from the December 2008 snowstorm (also a presidentially declared disaster).

Flooding resulted in evacuations at multiple locations along the Snoqualmie and Cedar Rivers, a breached levee on the Tolt River that damaged several homes, and an overtopped levee in the City of Pacific that resulted in flooding of nearly 100 homes and the displacement of several residents. In addition, the U.S. Army Corps of Engineers reported damages to the Howard Hanson Dam which provides flood control on the Green River.

### A. Flood Warning and Preparedness

The King County Flood Warning Center was open for six days (144 hours), from Tuesday, January 6, 2009 to Sunday, January 11, 2009; and again from Monday, January 12 to Tuesday, January 13. The automated Flood Warning Information Line (206-296-8200) received 1,986 calls during the event. Several hundreds calls were also received and responded to in the Flood Warning Center.

From January 5 through the morning of January 9, King County flood pages served 26,675 unique pageviews or 49,179 total pageviews. Of these, the main flood warning page served roughly 42,000 pageviews and approximately 20,000 unique pageviews (visits). Unique pageviews peaked at about 15,000 on January 7, 2009. For the month of January 2009, the Flood Warning Center web pages were accessed 122,642 times.

Howard Hanson Dam conditions will result in changes to flood warning protocols on the Green River, such as:

- 1) the Flood Warning Center will be opened earlier in response to major storm forecasts;
- flow thresholds will be based on dam releases rather than observed flows at Auburn, which will result in the threshold being reached seven hours earlier;
- 3) reduce Phase 4 threshold to 10,000 cubic feet per second (cfs);
- 4) increase Flood Patrols from King County, the Corps, and local city staff;
- provide automated notification system for next flood season (a subscription list is underway and further outreach to floodplain residents will be done once the notification system is established); and
- 6) develop an Incident Management Plan with Green River Valley cities by next flood season.



Aerial photo of Howard Hanson Dam.



Tolt River levee breach in January 2009. Emergency levee repair was completed within one week of breach.

King County Water and Land Resources Division staff are participating in the development of an Operational Action Plan with the four valley cities, the King County Office of Emergency Management, and the U.S. Army Corps of Engineers. This plan will be in place by the next flood season.

The King County Council also directed staff to develop a sand bag response plan for the next flood season so that sand bag materials are made available at key locations within each basin across King County.

Staff are also working with the Office of Emergency Management on the development of an automated notification system so that first responders, government agencies, and citizens can be notified automatically as river conditions worsen.

### B. Outreach

Four public meetings were held (in Pacific, Carnation, and the Cedar River Council twice) and four neighborhood meetings were held at the Tolt levee breach site, and in three locations along the Cedar River – at Royal Arch, Orchard Grove and Cedar Grove.

In light of the Howard Hanson Dam operational changes, WLRD Staff have also participated in Green River valley coordination efforts to develop outreach materials and public meetings to explain the impacts of changed dam operations on river flows during storm events, and provide citizens with information about emergency preparedness activities. The valley cities have hosted public meetings, and King County hosted a workshop for residents along the Middle

Green River on March 31 at Green River Community College.

In February 2009, flood response, preparedness and mitigation information was mailed to more than 6,000 addresses in King County floodplains. As a result, more than 200 homeowners expressed interest in either home buyouts that provide long-term risk reduction and reduce the need for capital projects, or home elevation projects to reduce flood damages.

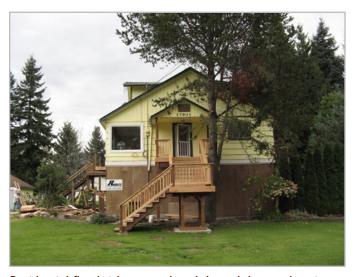
### C. Mapping and Studies

The operational changes to the Howard Hanson Dam could result in higher flows on the Middle and Lower Green River during a large storm event. The value of the recently updated Green River floodplain models is demonstrated in their use for emergency management scenarios as the Corps and local officials use the models to evaluate the impact of different flow levels on critical facilities, vulnerable populations, evacuation routes, and residential and commercial structures. This information also provides an essential function in helping residents understand potential flood risks and their options to reduce them.

### D. Grants and External Funding

King County currently manages 10 grants on behalf of the Flood District. The January flood triggered public assistance from FEMA for flood facility repairs, as well as FEMA Hazard Mitigation Grant Program (HMGP) funding to acquire or elevate flood-prone structures.

Over 500 individuals reported damages to their homes and property during this event, and over 200 homeowners expressed interest in buyouts or elevations.



Residential flood risks are reduced through home elevations.

King County worked with the Department of Development and Environmental Services (DDES) to identify substantially damaged homes (damage greater than 50 percent of the value of the structure) in unincorporated areas. The purpose was to help insured homeowners become eligible for an additional \$30,000 in Increased Cost of Compliance (ICC) insurance coverage from the National Flood Insurance Program to put toward elevation, relocation, or demolition of the structure. (Because substantial damage determinations must be made by the local building official, King County can only make this determination in unincorporated areas.) Staff have contacted cities to ensure that they are aware of the ICC insurance benefits for homeowners, as well as the HMGP grant opportunity.

The Hazard Mitigation Grant Program grant cycle will focus on substantially damaged structures, with funds expedited for acquisitions. The Flood District will submit two HMGP applications for approximately \$1.5M each, with Letters of Intent due May 1, 2009 and funding expected to be available in mid-2010. It is likely that one of these grants will be for substantially damaged structures, with funding anticipated on a faster timeline. Public workshops are being held to discuss the grant opportunity with homeowners. The first workshop, held in Renton as part of the Cedar River Council meeting, was attended by 35 people. The second meeting, co-hosted with the City of Snoqualmie, was attended by approximately 50 people.

King County was notified that the HMGP grant application submitted following the December 2007 presidentially-declared disaster will be awarded in April 2009. This grant funds the elevation of 14 homes and one commercial structure in the Lower Snoqualmie valley and the Kimball Creek area near the City of Snoqualmie. A second application to acquire three flood-prone homes is under review by FEMA. An HMGP grant from the November 2006 disaster to elevate nine structures in the Shamrock Park neighborhood near North Bend is still under review by FEMA.

Recently completed home elevations were featured in the DDES Quarterly News (<a href="http://www.kingcounty.gov/property/permits/publications/QNews.aspx">http://www.kingcounty.gov/property/permits/publications/QNews.aspx</a>), and will be the subject of an upcoming FEMA, 'Success Story' profile.



Flooding in Shamrock Park neighborhood in North Bend.

"My entire experience with the permitting process was outstanding. In general, things went even better than I had expected,"

~ Brian Tate, property owner near Snoqualmie, whose residence was part of a King County Structural Elevation Project.

King County is also evaluating the many stimulus package funding sources to determine eligibility for flood risk reduction projects. Most of these fund sources do not allow acquisitions, and construction generally must begin within 90 days and be completed within 12-18 months. One letter of intent has been submitted to the National Oceanic and Atmospheric Association for federal funding to support the Countyline to A Street Floodplain Reconnection Project (see Appendix A) along the White River. This project will increase flood storage and conveyance capacity, and will reduce flood risks in the City of Pacific.

### E. Planning

In January WLRD staff supported DDES with a FEMA Community Assistance Visit (CAV) conducted on January 15, 2009 to determine compliance with the National Flood Insurance Program. This visit occurs approximately every five years, and functions as an audit of King County's efforts to implement floodplain development policies and regulations. The



Tolt River levee breach.

primary concerns at the CAV meeting involved: the currency of local floodplain regulations; procedures for implementing these regulations; and information to document findings from the field inspection report. As a result of the CAV, King County will be proposing two code changes to the King County Council:

Amend King County Code 21A.24.270 to remove the ability for a professional engineer to prepare Elevation Certificates. This code amendment is in accordance with the determination made by the State Board of Registration for Professional Engineers and Land Surveyors on what professionals are able to complete the Elevation Certificate.

• Establish flood regulations for shallow flooding zones (AO Zones).

In addition to these two changes, King County will need to add regulations for coastal zones to implement the coastal flood mapping currently being completed.

On February 26, the Seattle District of the U.S. Army Corps of Engineers hosted a symposium entitled "An Examination of Levee Vegetation Policy." The purpose of the event was to discuss the Corps' policy requiring removal of woody vegetation on levees to be eligible for funding and to learn about the local perspective.

The issue of trees on levees is a long-standing issue throughout the country that involves differing perspectives among various federal, state and local agencies. The Corps has taken a different position on the issue than both the National Marine Fisheries Service

(NMFS) and the U.S. Fish and Wildlife Service (USFWS). The County is working cooperatively with all parties in discussions to reach a reasonable approach that does not compromise public safety and support longterm environmental objectives.

Public safety and salmon recovery are not mutually exclusive.

The symposium's keynote address emphasized that while all parties agree that public safety is paramount, King County does not believe that reducing flood risk is incompatible with salmon recovery. Until the Corps enters into Endangered Species Act (ESA) consultation with NMFS and USFWS, local governments such as King County are

required to degrade areas identified as critical habitat for federally listed species so that federally adopted recovery plans retain eligibility for federal funding.

In February, American Rivers, a national environmental organization, filed a 60-day Notice of Intent to sue the Corps over the PL 84-99 tree removal requirements. King County is currently applying for permits to remove over 200 trees to comply with the Corps requirements. Tree removal is required to receive federal funding for nine repair projects completed during 2008 and one project (Horseshoe Bend 205 on the Green River) scheduled for 2009. King County has received comments through the SEPA process from the Muckleshoot Indian Tribe and NMFS asking that trees not be cut, citing Endangered Species and Clean Water Act concerns.

### F. Capital Program

The January flood resulted in significant new damage to King County's flood facilities. These repair needs will likely lead to adjustments to the 2009 work program, and they will also influence the 2010 capital project recommendations.

During and immediately following the January flood, emergency repairs – costing approximately \$500,000 – were completed or initiated at five locations:

- 1) Middle Fork Snoqualmie Mason Thorson Extension (near North Bend)
- 2) Tolt Highway to Railroad Bridge (near Carnation)
- 3) Tolt Frew (near Carnation)

- 4) Cedar Belmondo (along SR 169)
- 5) Green 42nd Avenue (Tukwila)

Following the January flood, WLRD staff conducted inspections of each of the 500 facilities in our inventory along 120 miles of King County's rivers. These inspections have identified 75 damage sites and over \$25 million in new damages.

### **G.** Flood Control District Implementation

Staff level meetings of the Basin Technical Committees are scheduled in March and April to support Advisory Committee recommendations for 2010. Advisory Committee meetings are scheduled for the following dates and times:

- Wednesday, March 25, 2009, 9:00 a.m. Noon
- Thursday, April 16, 2009, 9:00 a.m. Noon
- Wednesday, May 6, 2009, 9:00 a.m. Noon



When properly designed, native vegetation can increase levee stability and help protect public safety, while improving river habitat.

These meetings will cover review of 2009 flood damages, updates to the 2009 capital program, the Howard Hanson dam situation, repair needs for the summer, and 2010 recommendations. An additional Advisory Committee meeting is scheduled for October 22, 2009 to review the year's progress.



Emergency repairs to Belmondo revetment protects SR-169, Cedar River trail and a regionally significant fiber optic cable.

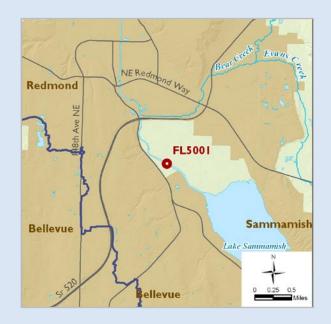
# **APPENDIX A**

2008 Project List and Summaries

## Willowmoor Floodplain Restoration

### **Description:**

Reconfigure the transition zone from Lake Sammamish to the Sammamish River in order to increase channel complexity, establish a native plant community and riparian buffer, and maintain adequate flow conveyance to meet flood control obligations in a sustainable manner. This will involve widening the total cross-sectional area available for flood flows so that plants can be allowed to grow within the banks and not be an obstruction to that flow. Instream complexity will be improved by the structural changes that are engineered in the design, as well as natural geomorphic changes that occur over time in response to the structural modifications. The project will also provide an increased degree of certainty surrounding conveyance and will improve habitat conditions in the area.



#### **Status:**

Design scheduled for 2009.

### **ISSAQUAH CREEK PROJECTS**

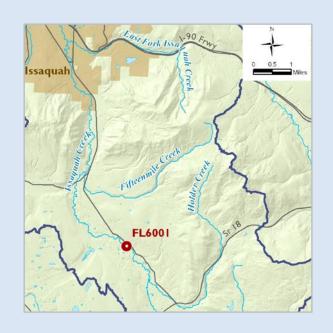
## **Issaquah Creek Streambank Stabilization**

### **Description:**

Erosion threatens the Issaquah Creek streambank in three locations, placing 500 linear feet of 252nd Street and other properties at risk. This project involves performing biotechnical bank stabilization projects at three sites along Issaquah Creek, which will greatly reduce the public safety risk associated with potential flooding and sediment problems.

### **Status:**

Site investigation and assessment of project feasibility were completed for this project. The results of this preliminary work determined that the damage locations were not sufficiently associated with public infrastructure for two of the three sites. The third site was determined to be more appropriately constructed by the King County Department of Transportation due to its proximity to a bridge location. Assessments are underway to evaluate flood impacts on the full set of flood protection facilities in this basin and biostabilize streambanks at high-risk sites..



## Cedar Grove Mobile Home Park Acquisition



### **Description:**

The Cedar Grove Mobile Home Park is located entirely within the floodplain and a high hazard overbank flood path of the Cedar River. Repeated flooding and damage of property and basic services have made this one of the highest flood risk areas in the basin. This project involves acquiring the entire flood-prone property (at fair market value); assisting in relocating park residents; removing the homes and all associated structures; and decommissioning and removing supporting infrastructure, such as the road, utilities, septic systems, and water supply wells. The project will eliminate all future flood damage and safety risks for these residents, will build on similar projects in the reach immediately upstream, and will expand the benefits associated with allowing for natural floodplain processes. It will also pave the way for a future restoration project extending along three quarters of a mile of the Cedar River from the Cedar Grove Road Bridge downstream through the Cedar Grove Mobile Home Park.

#### **Status:**

Acquisition of property completed in June 2008. Relocation of residents is underway and is scheduled to be completed 18-24 months from the June 2008 acquisition date. The project is within budget and on schedule. Funded by the King County Flood Control District, Salmon Recovery Funding Board and Conservation Futures (CFT).

### **CEDAR RIVER PROJECTS**

## **Cedar Rapids Levee Setback**

### **Description:**

Levees on both banks in this area constrict the floodway, increasing velocities and flood depths within the channel and result in a higher risk of scour and erosion to flood protection facilities within and downstream of the site, including the flood protection facilities at Ricardi, Riverbend and Brassfield-Maxwell, as well as Jones Road. The project will involve removing or setting back approximately 800 linear feet of fill and riprap making up the right bank levee and setting back a similar length of levee on the left bank, which will open up the floodplain to more frequent overbank flows while continuing to maintain existing levels of flood protection to Jones Road and downstream properties, including the mobile home park. The longrange plans for this area could include acquisition of additional properties remaining at risk from flood hazards and a set back of greater length or extent.



#### **Status:**

**COMPLETE** 

### **CEDAR RIVER PROJECTS**

## **Cedar River Repetitive Loss Mitigation**

### **Description:**

Existing homes have repeatedly experienced damage from flood events in King County. Repetitive damage to these structures was determined by the Federal Emergency Management Association based on the existence of a flood insurance policy and claims paid by that policy. Based on the amount and number of claims that have been paid, these properties are identified as being at high risk for future flood damage. For this reason, this project seeks to purchase and remove the structures or otherwise mitigate flood risks to these repetitive loss properties. Doing so will greatly reduce the public safety risk associated with potential flooding and sediment problems.

#### **Status:**

Multiple acquisitions and demolitions are complete. Negotiations for acquisition of additional parcels will occur in 2009.



## Elliot Bridge Levee Setback and Acquisition



### **Description:**

Homes on the left bank above and below the Elliott Bridge are subject to high velocity flows, channel migration, or both. One of the homes is identified by FEMA as a repetitive loss property. Not only are the homes subject to overtopping of the levee, but they are at risk from adjacent tributary flows and backwaters from the landslide hazard located immediately downstream, further increasing flood risks in this area. This project involves pursuing acquisition of flood-prone and repetitive loss homes, and setting back the levee in this reach. Acquiring these homes from willing sellers will allow the residents to safely relocate. Setting back the levees will reduce flood risk for remaining homes and infrastructure in this reach by opening up the floodplain for greater conveyance and storage of floodwaters, thereby lowering flood elevations and velocities. The remnant bridge abutments and approach road further constrict flows downstream. Recently completed relocation of the bridge may provide an opportunity to remove or setback the bridge abutments as well.

### Status:

Three acquisitions completed using funds available in 2008, including FCD and CFT. Early in 2009, two additional offers will be extended. Of the two remaining, one has a completed appraisal and is awaiting budget authorization, and an appraisal has been ordered but is not yet completed on the final parcel. As the actual appraised fair market values for these properties was higher than estimated for project planning purposes, the project lacks sufficient funding to ensure the ability to complete the project at this time.

# Rainbow Bend Levee Setback and Floodplain Reconnection

### **Description:**

The Rainbow Bend Levee on the right bank shunts deep, fast flood flows directly into the Cedar River Trail Revetment on the left bank. Together, these two flood protection facilities severely constrict flows through the reach, and the channel confinement increases localized scour velocities and flood elevations. This, in turn, increases the frequency of overtopping and exacerbates risks to the facilities and to neighboring residential and recreational uses. One of the greatest risks is erosion and scour along the levee protecting the regionally significant Cedar River Trail and the Maple Valley Highway (State Route 169). Once acquisition of flood-prone properties immediately behind the levee is complete, the levee can be set back or removed to provide greater accommodation of flood conveyance and natural riverine processes. The project will extend along three quarters of a mile on the mainstem Cedar River, starting at Cedar Grove Road Bridge and proceeding downstream. The project will result in lower flood elevations and velocities through the reach and will reduce erosion and scour along the flood protection facility protecting the trail and State Route 169. The project will also allow for natural flood attenuation and will support habitat restoration efforts within this reach.

### **Status:**

Feasibility and design are underway in cooperation with the City of Seattle.



## **Banchero-Barnes Revetment**



### **Description:**

Flood damage repair to protect a critical public facility that protects a small neighborhood of single family homes and roadways.

### Status:

COMPLETE

### CEDAR RIVER FLOOD DAMAGE REPAIRS

## **Belmondo Revetment**



### **Description:**

Flood damage repair to protect a critical public facility that protects SR-169, the regionally significant Cedar River Trail, and a major fiber optic cable line.

### **Status:**

Construction was delayed in 2008 due to permitting issues and limitations of the fish window construction period. An emergency repair was necessary following the January 2009 flood. Mitigation for this emergency work, and completion of the remainder of the full repair project are presently under design and scheduled for construction in 2009 or 2010.

### CEDAR RIVER FLOOD DAMAGE REPAIRS

# **Cedar River Trail Site 2 Revetment**

## **Description:**

Flood damage repair to protect critical public facilities.

### **Status:**

**COMPLETE** 



### CEDAR RIVER FLOOD DAMAGE REPAIRS

## **Dorre-Don**

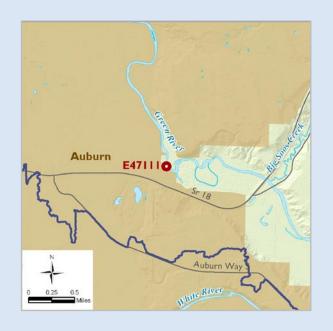
### **Description:**

Flood damage repair to protect a critical public facility that protects a neighborhood of single family homes and roadways.

### **Status:**



## **Fenster Levee Setback**



### **Description:**

A levee setback and biostabilization project.

#### **Status:**

Construction 2008; Auburn SRFB funded.

**GREEN RIVER PROJECTS** 

# Alaskan Way Seawall Replacement Feasibility and Design



### **Description:**

The 70-year-old Alaskan Way Seawall is failing and needs to be replaced. Tiny marine organisms are attacking and significantly weakening the wood timbers that make up the structural support of the seawall. In addition, the structure was damaged during the 2001 Nisqually Earthquake. Due to this past and on-going damage, the seawall is deteriorating at a more rapid rate. Most of the structure of the seawall is buried 13 feet below the surface, which makes inspection difficult, but recent inspections done of the visible areas continue to show an increase in decay. For these reasons, the seawall will be designed and replaced to ensure that transportation, utilities, and private infrastructure are protected and preserved. Additionally, the seawall replacement will ensure that the marine shoreline remains stable during seismic and storm events and the fill contained by the seawall will not damage the ecology of Puget Sound.

### Status:

Working with the City of Seattle to complete a service agreement between the City and the District.

# **Nursing Home Levee**

### **Description:**

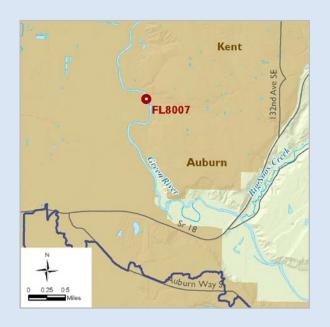
This levee is too steep, is structurally unstable, and was not designed to current safety standards. One location, at River Mile 25.95, has previously slumped due to the discharge of surface runoff over the slope and down the riverbank. Though temporary repairs were made in 2001, permanent repairs and Endangered Species Act-mandated mitigation measures have not yet been constructed. The riparian habitat is extremely degraded due to lack of large woody debris and overhanging vegetative cover, and the width of the riparian buffer is inadequate. Repair of this levee segment should be incorporated into a reach-length levee setback, with repairs including reconstruction of the levee toe, installation of in-stream large wood structures, excavation of a mid-slope bench and toe buttress, and revegetation of the lower bank and bench with live willow layers and native trees and shrubs. Levee upper slopes should also be stabilized. Overall, the action will improve conveyance capacity, prevent inundation of highly urbanized portions of the historical lower Green River floodplain, and will improve existing degraded habitat.

#### **Status:**

Project is tied to the Horseshoe Bend 205 project. Design of the segment that is not included with Horseshoe Bend was scheduled for the end of 2008, with construction beginning in 2009.



## **Dykstra Revetment**



### **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.

GREEN RIVER FLOOD DAMAGE REPAIRS

# Foster Golf Revetment & Tukwila 205 Tree Cutting Mitigation



### **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

#### Status:

Project mitigates impacts of tree-cutting required by the Corps of Engineers for participation in the PL 84-99 program. Project is delayed until 2009 due to Corps requirement for a biological assessment of the impacts of the proposed mitigation for tree removal.

### **GREEN RIVER FLOOD DAMAGE REPAIRS**

## **Galli's Section**

### **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.



### **GREEN RIVER FLOOD DAMAGE REPAIRS**

## **Horseshoe Bend 205**

### **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

### **Status:**

Project initiation delayed until 2009 due to lack of federal funding from the Corps of Engineers. Project originally scheduled to be implemented over multiple years, so completion will not be delayed.



### GREEN RIVER FLOOD DAMAGE REPAIRS

# Kent Shops - Narita



### **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.

### **GREEN RIVER FLOOD DAMAGE REPAIRS**

## Myer's Golf Levee



## **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.

### **GREEN RIVER FLOOD DAMAGE REPAIRS**

# Tukwila 205

### **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.



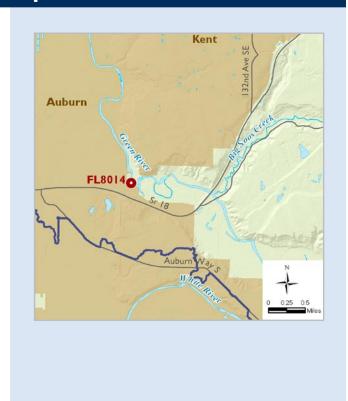
### GREEN RIVER FLOOD DAMAGE REPAIRS

# Foster Golf Revetment FEMA Repair

### **Description:**

Flood damage repair to protect commercial areas throughout lower Green River.

### **Status:**



## Miller River Home Buyout



### **Description:**

The Old Cascade Highway crosses the Miller River near its confluence with the South Fork Skykomish River. The left bank (west) road approach is at relatively low elevation across the Miller River's broad alluvial fan, and flood flows across the road threaten homes downstream of the Miller River Road. The project proposes to acquire property and remove housing and other structures from the flood hazard area.

#### Status:

Due to an uninterested property owner, funding was reallocated to Timberlane Village buyouts on the South Fork Skykomish, where three landowners entered into voluntary sale of their property to King County.

**UPPER AND LOWER SNOQUALMIE RIVER PROJECTS** 

## Snoqualmie Basin Downstream Assistance & Home Elevation Project



### **Description:**

Elevation of eight homes and one barn in the Snoqualmie River basin, each of which are at high risk of flooding.

### Status:

Four elevations are complete, three elevations are in progress, and two projects are in permit review.

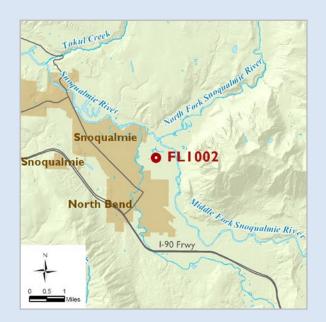
## North Bend Area Residential Flood Mitigation

### **Description:**

Although a system of levees generally protects most homes in the North Bend area from damage during minor floods, the capacity of the levee system is limited. Flows in excess of roughly 20-year magnitude will overtop portions of the levee system and cause damage to neighboring properties. Hazards are associated with the Middle Fork Snoqualmie River and the South Fork Snoqualmie River, as well as several smaller tributary streams. This project proposes to relocate or elevate individual structures to eliminate the associated risk of flood damage, with an initial focus on five unmitigated repetitive loss properties and their surrounding areas.

### **Status:**

Discussions underway with the Corps for possible cost-share and a FEMA grant for Shamrock Park-area flood mitigation is pending.



**UPPER SNOQUALMIE RIVER PROJECTS** 

## **South Fork Levee System Improvements**

### **Description:**

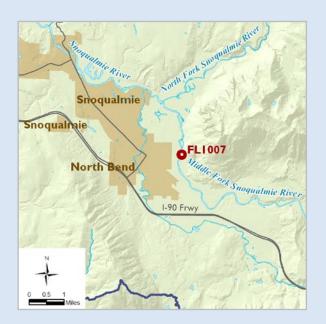
Extensive geotechnical deficiencies have been observed on the existing levee system along both banks of the South Fork Snoqualmie River through North Bend and the surrounding unincorporated areas. These problems can compromise the flood protection benefits of the levee system. The project proposes to rebuild and strengthen selected portions of the existing levee system in an approach that maintains current preferential protection of the more heavily developed parts of the City of North Bend. This action will improve performance of levee system, reducing levee failure or related risks to neighboring areas.

#### Status:

Preliminary study underway. Early action to repair eight sinkholes is complete.



## **Mason Thorson Ells**



### **Description:**

Flood damage repair on the Middle Fork Snoqualmie to protect residential area.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.

### UPPER SNOQUALMIE RIVER FLOOD DAMAGE REPAIRS

## **Mason Thorson Extension**



### **Description:**

Flood damage repair on the Middle Fork Snoqualmie to protect residential area.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.

# Middle Fork Snoqualmie Large Wood Mitigation

### **Description:**

Mitigation for an earlier (2006) hazardous logiam removal on the Middle Fork.

### **Status:**

**COMPLETE** 



### UPPER SNOQUALMIE RIVER FLOOD DAMAGE REPAIRS

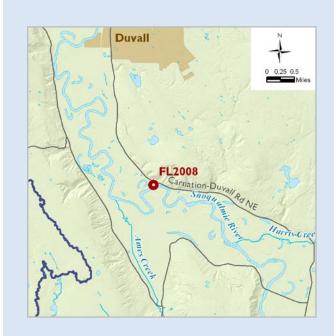
# Sinnera Quale Upper Revetment

### **Description:**

Flood damage repair on the Snoqualmie River.

### Status:

Partnership with King County Parks due to project location, which is adjacent to the Snoqualmie River Trail. Rescheduled for 2010.



## **Snoqualmie 205 Left Revetment**



### **Description:**

Flood damage repair on the Snoqualmie River.

### **Status:**

FEMA funding approved, and feasibility and design completed in 2008. Must consult with Puget Sound Energy and the Corps of Engineers prior to construction, and as such, the project is on hold until 2009 due to the need for PSE approvals.

### UPPER SNOQUALMIE RIVER FLOOD DAMAGE REPAIRS

## **Allen Revetment**



### **Description:**

Flood damage repair on the South Fork Snoqualmie River to protect major public infrastructure and commercial and residential areas.

#### **Status:**

## O'bert Levee

### **Description:**

Flood damage repair on the Upper Snoqualmie River mainstem to protect a residential area.

### **Status:**

Easement in process from landowner (school district). The project does not involve in-water work, and the project is scheduled to be completed by Washington Conservation Corps crews in the second quarter of 2009 pending receipt of the easement.



### UPPER SNOQUALMIE RIVER FLOOD DAMAGE REPAIRS

## **Riverbend**

### **Description:**

Flood damage repair on the Upper Snoqualmie River mainstem to protect a residential area.

#### **Status:**



# Si View Park



### **Description:**

Flood damage repair on the Upper Snoqualmie River mainstem to protect a residential area.

### **Status:**

**COMPLETE** 

UPPER SNOQUALMIE RIVER FLOOD DAMAGE REPAIRS

# **Shamrock Park HMGP Elevation Project**



### **Description:**

Elevate 16 homes at high risk of residential flooding.

### **Status:**

This project has received preliminary approval from the Washington State Emergency Management Division but is awaiting final funding approval from FEMA.

## **Kimball Creek Drainage Study & Improvements**

### **Description:**

The Kimball Creek basin formerly relied upon maintenance practices to keep drainage ditches, culverts, and standing water flowing freely. This basin has been without maintenance for well over 10 years resulting in a silting in of culverts and ditches. Usable acreage is now under the influence of standing water and swamps, creating significant problems for the owners and the City. This project involves a study to explore re-channeling Kimball Creek in the reach between SE 384th and Meadowbrook Way.

#### **Status:**

An early action beaver dam removal was completed in 2008. The drainage study is underway, with additional work taking place in 2009.



### LOWER SNOQUALMIE RIVER PROJECTS

# **Aldair Buyout**

### **Description:**

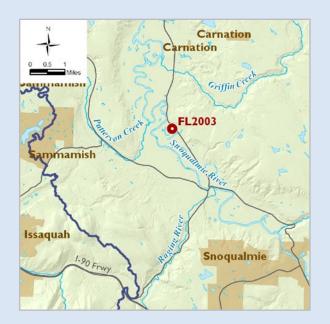
During recent flood events, the Aldair levee has had problems with extensive and increasing seepage. Ponds behind the levee have shown an unusual silty coloration when these seepage problems have been observed. This suggests possible underground erosion of fine material from the levee and the underlying banks, which can lead to a sudden, catastrophic levee breach. This project proposes to remove existing homes from low-lying ground immediately behind the Aldair levee in order to greatly reduce the public safety risk associated with potential levee failure.

### Status:

Purchase of one property behind levee was completed in 2008; structures are being demolished in 2009.



### **Neal Road Relocation**



### **Description:**

Erosion along the right bank of the Snoqualmie River channel has undermined a portion of the Neal Road, which runs parallel to the Fall City-Carnation Road (State Route 203) and serves several farms and a public boat ramp. A rock revetment was installed in response to this problem in the 1960s, but the problems involve deep failure surfaces that have not been stabilized by the rock riprap. The north end of Neal Road has been closed since it was undermined in 2003. This project involves relocating the north end of the road to a location outside the erosion risk area and abandoning the north end of the road (from the existing SR 203 intersection to the public boat ramp) to allow natural river processes to occur. Doing so will eliminate the risk to public safety associated with potential road failure, will improve emergency access to flood-prone farms, and will minimize disturbance of the river channel environment, as well as need for future inspection, maintenance and repair.

#### **Status:**

Design work by King County Roads is underway, and the project is on track for construction in 2009.

### LOWER SNOQUALMIE RIVER FLOOD DAMAGE REPAIRS

### **McElhoe Pearson**



## **Description:**

Flood damage repair on Lower Snoqualmie River.

### Status:

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.

### **Aldair**

### **Description:**

Flood damage repair on Lower Snoqualmie River.

#### **Status:**

**COMPLETE** 



### **TOLT RIVER PROJECTS**

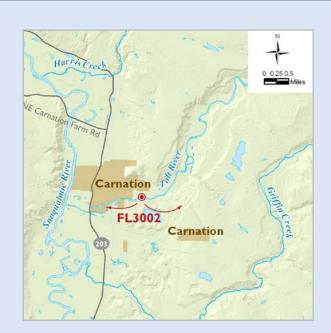
# **Tolt River Supplemental Study**

### **Description:**

Previously-completed studies of the Lower Tolt River Floodplain Reconnection project evaluated the project's potential impact on flood hazards within the City of Carnation, concluding that the project was neutral or slightly beneficial in mitigating flood hazards. While the floodplain reconnection does not appear to increase flood hazards, there have been no studies that evaluate how to improve mitigation of potential flood hazards to the City of Carnation from the Tolt River at its confluence with the Snoqualmie. The Supplemental Study involves a feasibility study on the cumulative impacts of the Lower Tolt Acquisition, Tolt River SR 203 to Trail Bridge Floodplain Reconnection, Tolt River Mile 1.1 Levee Setback, and Tolt River Mouth to SR 203 Levee Setback. The study will ultimately allow for better integration of flood hazard mitigation into proposed projects on the Tolt River.

#### **Status:**

Study began in 2009.



# **Tolt River Flood Damage Repairs**



### **Description:**

Flood damage repair project to stabilize the Tolt River Road and protect the road from active channel migration.

### **Status:**

Design for this project is underway, and construction is scheduled for 2009.

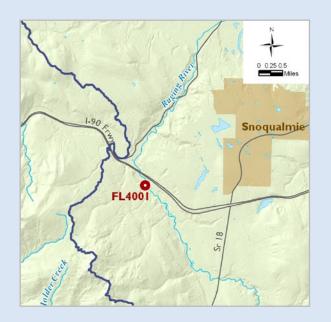
# Alpine Manor Mobile Home Park Neighborhood Buyout

### **Description:**

Flow between or through the cabled-log Jelstrup revetment and the Hess rock revetment along the Raging River could result in a channel avulsion though the Alpine Manor Mobile Home Park. Nine of the approximately 35 homes in the mobile home park are in the severe or moderate channel migration zone. Five homes in the neighborhood are also within the channel migration zone. While none of these homes are within the regulatory floodplain; this neighborhood is in the area mapped as being subject to shallow flooding. Such flooding was observed throughout this neighborhood during the November 1990 flood, which reached a peak somewhat lower than the calculated 100-year flood peak of for the Raging River. The proposed project includes the acquisition and removal of most, if not all, of the homes in the neighborhood, accompanied by restoration of the riparian area in a manner that supports salmon habitat recovery needs. The project could be phased through a long-term acquisition and restoration strategy and will permanently remove the risk to residents and private property in this location.

### **Status:**

Discussions are underway with several willing landowners in this neighborhood. The project is linked to the Alpine Manor Neighborhood Buyout HMGP Acquisition Project, which was approved by FEMA with funding awarded.



# Alpine Manor Neighborhood Buyout HMGP Acquisition Project



### **Description:**

Acquisition and demolition of five structures on three properties at high risk of flooding.

### **Status:**

HMGP application approved by FEMA and funding for the project awarded. Two structures on one property purchased; demolition scheduled for 2009. This project is linked to the Alpine Manor Mobile Home Park Neighborhood Buyout

### RAGING RIVER FLOOD DAMAGE REPAIRS

### **Arruda Revetment**



### **Description:**

Flood damage repair on the Raging River to protect residential areas.

### **Status:**

### RAGING RIVER FLOOD DAMAGE REPAIRS

# **Bryce Bump Training Levee Revetment**

### **Description:**

Flood damage repair on the Raging River to protect residential areas.

#### **Status:**

**COMPLETE** 



### RAGING RIVER FLOOD DAMAGE REPAIRS

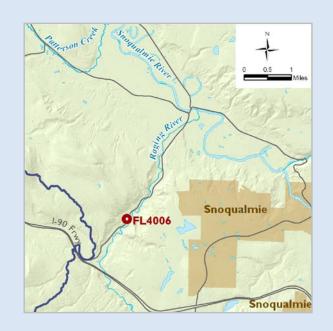
# **Preston Fall City Lowest Revetment**

### **Description:**

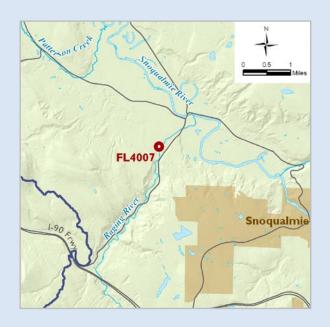
Flood damage repair on the Raging River to protect residential areas.

### **Status:**

Project shifted to 2009 due to Corps permit requirements for in-water work.



# Raging Bridge to Bridge Left



### **Description:**

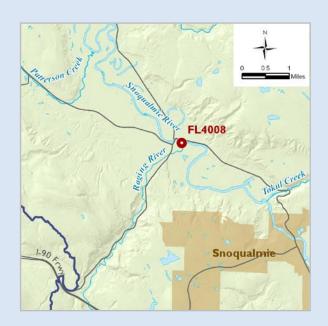
Flood damage repair on the Raging River to protect residential areas.

### **Status:**

Project shifted to 2009 due to reduced urgency following more detailed site investigations.

### RAGING RIVER FLOOD DAMAGE REPAIRS

# Raging Bridge to Mouth Right



### **Description:**

Flood damage repair on the Raging River to protect residential areas.

### **Status:**

COMPLETED AHEAD OF SCHEDULE; Corps of Engineers PL 84-99 repair.

## RAGING RIVER FLOOD DAMAGE REPAIRS

# **Waring Revetment**

## **Description:**

Flood damage repair on the Raging River to protect residential areas.

### **Status:**



# Countyline to A-Street Flood Conveyance Improvement



### **Description:**

Flows in this reach are constricted by concrete revetment banks and are partially contained by a short length of left bank levee. Currently, the active channel is disconnected from its floodplain by the left bank levee, prohibiting sediments from being deposited and flood waters from entering the left, undeveloped overbank area. Flood flows overtop the right bank revetment, placing the existing residential development at risk. The White River carries a high sediment load and this reach is a depositional area. The extent of flooding is likely to increase with increased deposition which may exacerbate flood flows on the right overbank and to downstream developed areas, resulting in damage to the Pacific City Park concrete revetment and the adjacent residential community. This multistage project proposes to: acquire private property; conduct a floodplain analysis to determine current base flood elevations, prepare design calculations, quantities and plans; remove portions of the constricting levee and reconnect the active channel to its left overbank. The constructed project allows for improved flood flow conveyance into the existing floodplain area which will result in lower flood elevations and restored natural channel processes through the reach.

#### **Status:**

Design plans are 30 percent complete for this project with detailed design in progress and King County is in acquisition negotiations with affected landowners.

### WHITE RIVER PROJECTS

## **Red Creek Acquisitions**

### **Description:**

The White River along this reach experiences periodic and rapid river channel migration. In addition, deep fast flows occur in various paths in the right bank floodplain. The extent of inundation and bank erosion can quickly change, threatening several existing residential structures. The Red Creek channel and its confluence can be overwhelmed by White River flood flows along this 1.25-mile reach. One home is surrounded by multiple-channel flow paths in the floodplain; another home is immediately adjacent to the mainstem and within the riparian buffer area; a third home is on a low terrace of floodplain, but is in the direct flow path of the right bank mainstem meander; two other homes are positioned on a somewhat higher terrace and may not be directly affected by current flood flows but may lie within a channel migration hazard area and could be at risk in the future. The project proposes to acquire and remove at-risk residential homes, which will permanently eliminate the risk to public safety along this reach. Land will be restored to a natural grade and replanted with native plants and future development prohibited from flood and channel migration hazard zones.



#### **Status:**

Preliminary discussions with property owners are in progress to determine feasibility.

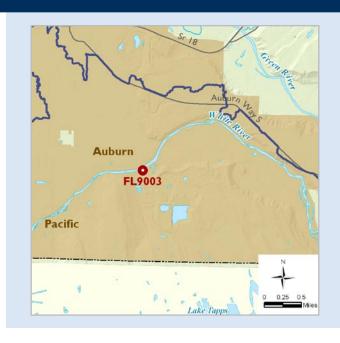
WHITE RIVER FLOOD DAMAGE REPAIRS

## **Stuck River Drive**

### **Description:**

An existing revetment along Stuck River Drive was damaged with bank face scour during the November 2006 flood event. This repair project on the White River was installed in August 2008 and served to replace 300 feet of the eroded revetment with a rock and log toe of bank along with a biostabilized bank face. Revegetation along the City of Auburn's recreational trail was completed in January 2009.

### **Status:**



## **APPENDIX B**

Flood District 2008 Budget

The total 2008 budget for the Flood District was \$30,152,803. This includes expenditures planned for district administration in the main flood district fund, as well as expenditures in the related King County operating and capital funds.

District Administration	\$300,000
Operating	
Annual Maintenance, Facility Assessments	\$1,041,730
Fld Hazard Planning, Grants, Outreach	\$506,950
Fld Hazard Studies, Maps, Technical Services	\$808,392
Flood Preparation, Flood Warning Center, Post Flood Activities.	\$221,878
Program Management, Supervision, Finance, Budget	\$1,781,709
Program Implementation	\$1,355,296
Total Operating	\$5,715,955
Conital	
Capital FL0001 Miller River Home Buyout	¢734 399
FL0003 Timberlane Village Buyout	
FL0004 Timber Ln Erosion Buyouts	
FL1003 Sf Levee System Improve	
FLI001 Mf Snog Flood Repairs	
FL1004 Sf Snoq R Flood Repairs	
·	
FLI005 Uppr Snoq R Flood Repairs	
FL1002 N Bend Resid Flood MitgtnFL2001 Aldair Buyout	
FL2001 Aldair BuyoutFL2003 Neal Road Relocation	
	• / /
FL2002 Lwr Snoq R Flood Repairs	
FL3001 Tolt River Flood RepairsFL3002 Tolt R Supplemental Study	
,	
FL3003 Tolt R Rd Shoulder Prtctn	
FL4002 Raging R Flood Repairs	
FL4001 Alpine Manor Mob Prk AcqFL5001 Willowmoor Fldplain Rest	
•	
FL6001 Issaquah Cr Strmbank Stab	
FL7000 Cedar R Flood Protection	• •
FL7002 Cedar Rapids Levee SetbckFL7004 Cedar R Rep Loss Mitigatn	
FL7005 Elliott Br Levee Setback	
FL7006 Rainbow Bnd Levee Setback	
FL7001 Coder Cross Mobile Ass	
FL7001 Cedar Grove Mobile Acq	
FL8002 Ak Wy Seawall Feas & Dsn	
FL8005 Nursing Home Levee	
FL8006 Segale Levee #1	•
FL8003 Green R Flood Repairs	
FL8011 Kent Shops-Narita	
FL8012 Myer's Golf Levee	
FL9001 County Ln To A-St Improv	
FL9003 White R Fld Repr Stuck Dr	
FL9004 White-Greenwater Acq	
FLM000 Flood Cip Mon/Maint	
FLX100 Flood Distrct Contingency	
Total Capital	
Grand Total	\$30,152,803

#### **Actual 2008 Revenue**

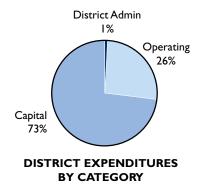
The revenue received this year to accomplish the District's work program can be divided into three categories. The first is the District's revenue generated primarily by the flood district levy, the second is King County supplemental revenue, and the third is external grant funding. The total revenue received in 2008 was \$36,778,082.

Sources of Revenue	Amount
District Revenue	
Flood District Levy	\$33,239,735
Leashole Excise Tax	\$213,542
Proceeds from Defunct Flood Districts	\$209,483
Interest Earnings	\$531,088
State Forest Funds	\$18,590
King County Revenue	
Contribution River Improvement Fund	\$566,636
Contribution Inter-County River Improvement Fund	\$67,000
Other Miscellaneous Revenue	\$71,891
Grants	\$1,862,116

#### **Actual 2008 Expenditures**

The expenditures for 2008 include the district administration costs incurred directly in the contract fund, as well as the capital and operating expenditures in the King County funds. The capital expenditures are the largest portion at 73%, followed by the operating expenditures at 26%. The district administration expenditures were only 1% of the total. The total of all 2008 expenditures is \$17,815,024.

Total Revenue ...... \$36,780,082



#### Flood District 2008 Expenditures

District	Administration	\$213,732			
Operat	ting Expenditures (1)				
Program	Implementation	\$1,060,027	Flood H	azard Planning / Grants / Outreach	\$392,587
Annual N	Maintenance / Facility Assessment	\$1,125,889	Flood H	azard Studies, Maps, Technical Servi	ices\$331,554
Flood W	arning Center / Flood Prep / Post Fl	ood\$203,721	Fund Ov	erhead Reimbursements	(\$892,227)
Program	Management, Supervision, Finance	\$2,295,559		Total Operating Costs	\$4,517,110
Cabital	l Expenditures <sup>(2)</sup>				
FL0001	Miller River Home Buyout	\$1.668	FL6001	Issaquah Cr Strmbank Stab	\$10.886
FL0003	Timberlane Village Buyout		FL7000	Cedar R Flood Protection	
FL0004	Timber Ln Erosion Buyouts		FL7001	Cedar Grove Mobile Acq	• •
FL1001	MF Snoq Flood Repairs		FL7002	Cedar Rapids Levee Setbck	
FL1002	N Bend Resid Flood Mitgtn		FL7003	Cedar R Flood Repairs	
FL1003	SF Levee System Improve		FL7004	Cedar R Rep Loss Mitigatn	
FL1004	SF Snoq R Flood Repairs		FL7005	Elliott Br Levee Setback	
FL1005	Uppr Snoq R Flood Repairs		FL7006	Rainbow Bnd Levee Setback	
FL1007	Mason Thorson Ells		FL7008	Banchero-Barnes Revetment	
FL1008	Mason Thorson Extension		FL7009	Belmondo Revetment	
FL1009	MF Sno Large Wood Mtgtn		FL7010	Cedar R Tr Site 2 Rytmnt	
FLIOII	Sno 205 Left Revetment		FL7011	Dorre-Don	
FL1012	Allen Revetment	• •	FL7012	Cedar Grove Mobile Srfb	• •
FL1013	O'bert Levee	• •	FL7013	Rainbow Bend Phase 2 Kcd	
FL1014	Riverbend		FL8002	Ak Wy Seawall Feas & Dsn	
FL1015	Si View Park		FL8003	Green R Flood Repairs	
FL1016	Shamrock Park Hmgp Elevtn	• •	FL8005	Nursing Home Levee	
FL1017	Kimball Creek Drainage		FL8006	Segale Levee #I	
FL2001	Aldair Buyout		FL8007	Dykstra Revetment	
FL2002	Lwr Snoq R Flood Repairs		FL8008	Foster Golf Rytmnt	
FL2003	Neal Road Relocation		FL8009	Galli's Section	
FL2006	Mcelhoe Pearson	\$60,644	FL8010	Horeshoe Bend 205	\$42,678
FL2007	Aldair	\$74,346	FL8011	Kent Shops-Narita	
FL2008	Sinnera Quale Uppr Rvtmnt	\$63,404	FL8012	Myer's Golf Levee	
FL3001	Tolt River Flood Repairs		FL8013	Tukwila 205	
FL3002	Tolt R Supplemental Study		FL8014	Foster Golf Course Fema	
FL3003	Tolt R Rd Shoulder Prtctn		FL9001	County Ln To A-St Improv	
FL4001	Alpine Manor Mob Prk Acq		FL9003	White R Fld Repr Stuck Dr	
FL4002	Raging R Flood Repairs	\$6,457	FL9004	White-Greenwater Acq	
FL4004	Arruda Revetment		FL9006	Stuck River Drive	
FL4005	Bryce Bump Levee Rvtmnt	\$27,131	FLM000	Flood Cip Mon/Maint	\$4,705
FL4006	Preston FI Cty Low Rytmnt		FLX011	Large Wood Stockpile	
FL4007	Raging Br To Br Left			Default Project (2)	
FL4008	Raging Br To Mouth Right				
FL4009	Waring Revetment			Total Capital Costs	\$13,084,183
FL4011	Upper Preston Hmgp Acq			Grand Total	\$17.815.024
FL5001	Willowmoor Fldplain Rest			Grand Ideal	ψ 1 7,0 1 J,024
	·		1		

<sup>(</sup>I) The operating costs reported here are \$90,659 less than shown in ARMS for the Flood District operating fund I561. This difference was due to district administration costs that should have been incurred in the main Flood District fund. They will be corrected in ARMS in 2009.

<sup>(2)</sup> Costs reported in the capital fund default project D15712 are due to interest expense incurred from a negative cash balance in the fund. In early 2009 the Flood District Board of Supervisors approved a resolution allowing an additional cash transfer to the fund to avoid interest expense.

## 2008 YEAR-END DISTRICT FUND BALANCE

The initial year of the District closes with an ending balance of \$18,965,058. This is the combined balance of the three funds that comprise the entire District program. The funds are the district's main fund where the levy revenues are collected and the associated King County operating and capital funds.

2008 Beginning Balance	\$0
Revenue	\$36,780,082
Expenditures	(\$17,815,024)

2008 Ending Balance ...... \$18,965,058

The total 2009 budget for the Flood District is \$45,609,343. This includes planned expenditures for district administration in the main flood district fund, as well as expenditures in the related King County operating and capital funds.

#### **District Administration**

\$450,000

#### **Operating Budget**

Annual Maintenance, Facility Assessments: \$1,128,369

Fld Hazard Planning, Grants, Outreach: \$446,342

Fld Hazard Studies, Maps, Technical Services: \$1,107,108

Flood Preparation, Flood Warning Center, Post Flood Activities: \$299.968

Program Management, Supervision, Finance, Budget: \$2,006,138

Program Implementation: \$970,806

Total Operating Budget: \$5,958,731

#### **Capital Budget**

FL0001	Miller River Home Buyout	
FL0002	Miller River Road Protection	
FL0004	Timber Lane Village Home Erosion Buyouts	
FL1002	North Bend Area Residential Flood Mitigation	
FL1003	South Fork Levee System Improvements	
FL1004	South Fork Snoqualmie Flood Damage Repairs	
FL1005	Upper Snoqualmie River Flood Damage Repairs	
FL1017	Kimball Creek and Snoqualmie Basin	
FL1018	City of Snoqualmie Natural Area Acquisitions	
FL1019	Middle Fork Levee System Capacity Improvements	
FL2001	Aldair Buyout	
FL2002	Lower Snoqualmie River Flood Damage Repairs	,
FL2003	Neal Road Relocation	
FL3001	Tolt River Flood Damage Repairs	
FL3002	Tolt River Supplemental Study	
FL3003	Tolt River Road Shoulder Protection	
FL3004	Lower Tolt River Acquisition	
FL3005	San Souci Neighborhood Buyout	
FL3010	Tolt River Mouth to SR 203 Floodplain Reconnection	
FL4001	Alpine Manor Mobile Home Park Neighborhood Buyout	
FL4002	Raging River Flood Damage Repairs	
FL5001	Willowmoor Floodplain Restoration	
FL6001	Issaquah Creek Streambank Stabilization	
FL7001	Cedar Grove Mobile Home Park Acquisition	
FL7003	Cedar River Flood Damage Repairs	
FL7004	Cedar River Repetitive Loss Mitigation	
FL7005	Elliott Bridge Levee Setback and Acquisition	
FL7006	Rainbow Bend Levee Setback & Floodplain Reconnect	
FL7014	Dorre Don Meanders- Phase I	
FL7015	Herzman Levee Setback & Floodplain Reconnection	
FL7016	Jan Road-Rutledge Johnson Levee Setbacks	
FL7017	Maplewood Acquisition and Levee Setback Phase I	
FL8002	Alaskan Way Seawall Replacement	
FL8003	Green River 2006 Flood Damage Repairs	
FL8005	Nursing Home Levee	
FL8011	Kent Shops-Narita	.\$1,422,858
FL8016	Briscoe Levee #1-#3, #5-#8	
FL8017	Desimone Levee #1	
FL8018	Desimone Levee #2	
FL8019	Desimone Levee #3	
FL8020	Desimone Levee #4	
FL8021	Riverside Estates/Reddington	
FL8022	Segale Levee #2 & #3	
FL8023	Segale Levee #4	
FL8024	South Park Duwamish Backwater Trenton Storm Drain .	
FL9001	County line to A-Street Flood Conveyance	
FL9002	Red Creek Acquisitions	
FL9004	White-Greenwater Acquisition	
	Flood CIP Monitoring/Maintenance	
FLS000	Subregional Opportunity Fund	
FLX100	Flood District Capital Contingency	. (\$860,000)

<sup>(1)</sup> The budgets for the capital and operating components are reported as ultimately approved by the King County Council and differ slightly from the Flood District budget resolution. In the operating component this difference (\$73,754) is due to last minute technical adjustments for King County's furlough days and changes to COLA assumptions. In the capital fund, the Flood Emergency Contingency project (\$135,000) added late in the Flood District process was not included in the amount approved by the Council.

# **APPENDIX C**

King County Flood Control District

#### **Provision and Scope of Services**

The District is an independent special purpose district of the State of Washington, and per the authorizing ordinance and the authority granted under state statute, the Metropolitan King County Council governs the District as the its Board of Supervisors (Board). The Board is supported by committees comprised of local elected officials and other key stakeholders, and the District partners with numerous entities, from local tribes and watershed planning groups to state and federal agencies.

In 2007, the District entered into an interlocal agreement (ILA) with King County to provide flood protection services to the District, and services are provided to the District through the Water and Land Resources Division of King County's Department of Natural Resources and Parks. (See Appendix D.) Under the terms of the ILA, the District directs King County to implement the District's work program, thus drawing upon the County's long-standing expertise in flood protection and floodplain management. This arrangement ensures that flood protection services are provided to the citizens of King County in the most effective and efficient manner possible. The 2006 King County Flood Hazard Management Plan serves as the District's Comprehensive Plan.

The work program of the District is comprised of two major components:

- 1) operational and programmatic activities, such as identifying flood risks, preparing for and responding to flood events, maintaining over 500 facilities in the County's flood protection system, and coordinating the King County Flood Control District Advisory and Basin Technical Committees; and
- 2) a capital improvement program to rehabilitate flood protection facilities and other projects to protect structures at high risk of flooding. Over 80 percent of the District's funds are allocated to the capital component of the work plan.

#### Program Management and Supervision; Finance, Budget and General Administration

This element of the operational work program includes supervisory, budgeting, and administrative services for the District. Major activities during the year included hiring processes for several positions, including a budget and finance officer, three environmental scientists, and two program manager positions for the Snoqualmie/South Fork Skykomish and Green/White River basins. Additional activities included grant billing and financial management for sixteen active grants, and the development of a capital project tracking and accounting database system.

#### **Governance and Decision Making**

The King County Flood Control District was formed by Ordinance No. 15728 of the Metropolitan King County Council in April 2007. Under this ordinance, the Council was granted the authority to govern the District as its Board of Supervisors, consistent with RCW 86.15, the state legislation that authorizes Flood Control Districts. The decision-making of the Board of Supervisors is supported by three committees, each of which provide important input on flood protection needs and priorities throughout King County, ensuring flood risk reduction activities are implemented in the most effective and efficient manner possible.

#### A. Executive Committee

The Executive Committee is a four-member sub-group of the Board of Supervisors that has defined decision-making authority and performs executive functions of the Flood Control District. Such functions include approving contracts for goods and services up to \$100,000; reviewing and recommending capital projects to the Board; developing and approving staffing and personnel policies related to the administration of the District; and overseeing the daily administration of the District.

Each member of the Executive Committee is elected by the Board and serves a one-year term, and the District bylaws require that membership reflect the geographic diversity of the District. Both a chair and vice-chair, elected by members of the Committee, provide Committee leadership.

#### B. Advisory Committee

Per the authority granted in RCW 86.15, the Board of Supervisors authorized the formation of a fifteen-member advisory committee as part of Ordinance No. 15728. Under the ordinance, the advisory committee is charged with the task of "providing expert policy advice to the District Board of Supervisors on regional flood protection issues. The committee shall review and recommend an annual work program and budget for the district, including capital improvement program projects and funding levels, subject to approval or approval and modification by the District Board of Supervisors." The advisory committee's recommendations must be filed with the clerk of the King County Council no later than August 31 of each year.

The advisory committee is composed of both permanent and rotating (two-year) members. The ten permanent seats on the committee are held by each mayor, or council member alternate designated by the mayor, of Tukwila, Auburn, Kent, Renton, Snoqualmie, North Bend, Carnation, Seattle and Bellevue. The King County Executive is also a permanent member of the committee.

Four of the rotating seats are held by mayors or city council members as nominated by the Suburban Cities Association. One of the two-year seats is held by an individual selected by the King County Council who represents one of King County's Unincorporated Area Councils.

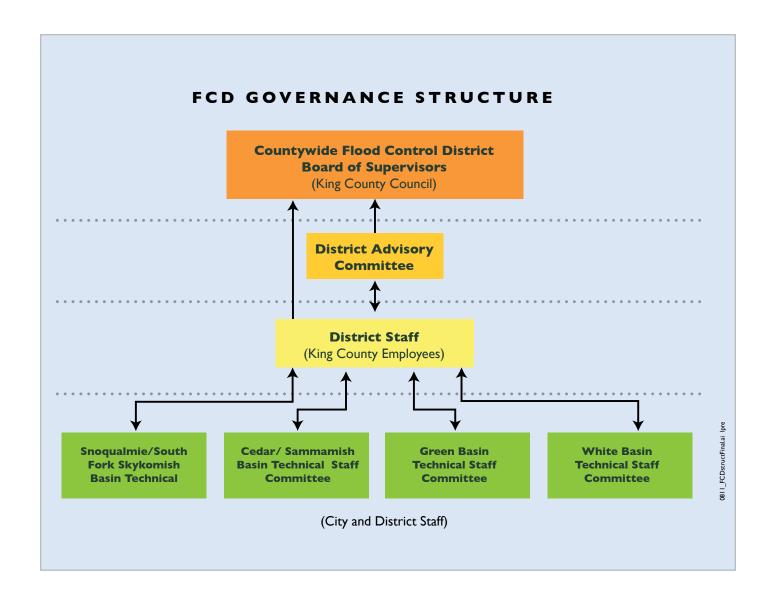
Each member of the committee is allowed one alternate, who will fill in for the member as needed. If the committee member is an elected official, the alternate must also be an elected official from the same jurisdiction.

While the Advisory Committee plays a very important role in the governance of the District, it is, in fact, advisory to the District Board of Supervisors. Ultimate decision making authority rests with the King County Council, acting as the Board of Supervisors, although great care has been taken by the Council to appoint committee members who are representative of a wide range of interests and who are highly respected members of their own communities.

#### C. Basin Technical Committees

In addition to the Executive Committee and the Advisory Committee, a group of basin technical committees were formed to ensure that basin-scale issues and technical information are factored into the District's decision-making processes. The basin technical committees are modeled after the Green River Flood Control Zone District Technical Committee, which consisted of public works officials from cities in the basin who were responsible for providing work program recommendations to an Executive Committee. For the District, committees exist for each of the five river basins — Snoqualmie, South Fork Skykomish, Cedar-Sammamish, Green, and White — and are comprised of city staff from jurisdictions within each basin, as well as King County staff, to accomplish the following objectives:

- Provide input to District staff regarding annual and long-term capital improvement project priorities;
- Share relevant information across areas of the District that would influence implementation of the district's work program;
- Review and help guide project implementation, as appropriate;
- Develop policies and issue papers as required; and
- Coordinate jointly with state and federal partners on relevant issues (i.e., flood warning, mapping, permitting, and capital project implementation).



# **APPENDIX D:**

King County & King County Flood Control District

# INTERLOCAL AGREEMENT BETWEEN KING COUNTY AND THE KING COUNTY FLOOD CONTROL ZONE DISTRICT REGARDING FLOOD PROTECTION SERVICES

This Agreement is hereby entered into by King County, a home rule charter County in the State of Washington ("County"), and the King County Flood Control Zone District, a quasi-municipal corporation of the State of Washington ("District") (the "Parties" or when singular, the "Party") and shall be effective upon execution by King County and the District.

WHEREAS, the District desires to carry out its mission to provide flood protection projects and services throughout the County as efficiently and effectively as possible;

WHEREAS, the County has a long history of implementing flood protection projects and services in King County;

WHEREAS, the County, through its department of Natural Resources and Parks, provides a full range of flood protection projects and services, as well as related services, such as public outreach and public information, budget preparation, legislative support, project management, and other support services;

WHEREAS, the County's flood protection projects, services and activities have earned the highest Federal Emergency Management Agency (FEMA) flood protection rating of any county in the country, saving businesses and residents hundreds of thousands of dollars annually on flood insurance premiums;

WHEREAS, the District has the financial resources to provide significantly enhanced flood protection projects and services for the benefit of the citizens of the County;

WHEREAS, the County and the District, although separate legal entities, share the common goal of helping to protect the citizens of the County from the ravages of flooding;

WHEREAS, the District and the County entered into an Interlocal Agreement regarding support services for the period January 1, 2008 through December 31, 2008;

WHEREAS, the District and the County desire to continue the provision of flood protection projects and services by the County to the District; and

WHEREAS, the District and the County are each authorized to enter into this Agreement pursuant to Chapter 39.34 RCW (the Interlocal Cooperation Act) and RCW 86.15.080(8) and 86.15.095.

NOW, THEREFORE, it is agreed by the parties as follows:

#### 1. <u>Purpose and Scope of the Agreement.</u>

- 1.1. The purpose of this Agreement is to provide the terms and conditions under which the District will use its financial resources and the County will use its technical expertise for effective and efficient flood protection.
- 1.2. The scope of the flood protection program entered pursuant to this Agreement will be funded by District revenues (and revenues obtained for the District by the County), and will be established by the District's budget and work program.

#### 2. <u>District Obligations and Authority.</u>

- 2.1. In consultation with the County, the District shall adopt by resolution an annual budget and annual work program as prescribed in RCW 86.15.140.
- 2.2. The District shall pay for the costs incurred by the County, consistent with the terms of this Agreement and the annual budget and annual work program, as follows:
  - 2.2.1. District shall pay the County for all actual costs incurred for providing the services under this Agreement, such as direct labor, employment benefits, equipment rental, sub-contractors, materials and supplies, utilities, permits, capital improvements, financing expenses, and acquisitions.
  - 2.2.2. The District shall pay the County for costs of legal services that are not adversarial to the District and that are provided to the County in its administration and implementation of the annual budget, annual work program and this Agreement.
  - 2.2.3. The District shall pay the County for administrative overhead costs for the services provided by the County to the District. The administrative overhead costs incurred from the distribution of central rate charges shall be billed to the District in accordance with standard methodologies for determining such costs as reviewed and approved by the King County Office of Management and Budget and included to generate the

overhead costs in the adopted County budget each year. The standard methodologies are described in Attachment A to this Agreement.

- 2.3. The District shall respond to requests received by the District for District public records pursuant to Chapter 42.56 RCW, applicable District resolutions and this Agreement. The District shall notify the County of such requests as soon as possible, but in any event within two (2) business days.
- 2.4. The District shall cooperate fully in executing documents necessary for the County to provide services under this Agreement.
- 2.5. The District shall provide services of District legal counsel as necessary to carry out the annual budget, annual work program and this Agreement.
- 3. <u>County Obligations and Authority.</u>
- 3.1. Unless otherwise directed by the District, the County shall make available the Clerk of the County Council to serve as Clerk of the District ("Clerk of the Board") and to provide services to the District that are similar to the services provided by the Clerk of the Council to the County Council.
- 3.2. The County shall perform or contract for the performance of all services necessary or convenient to carry out the annual budget, annual work program and this Agreement, including but not limited to the following:
  - 3.2.1. Maintain accounts and records, including labor, property, financial and programmatic records, which sufficiently and properly reflect all direct and indirect costs of any nature expended and services performed by the County pursuant to this Agreement.

- 3.2.2. Provide staffing and administrative services for the District's Advisory Committee and Basin Technical Committees.
- 3.2.3. Make available to the District during regular business hours all records related to this Agreement that are not privileged.
- 3.2.4. Implement a file retrieval system to respond to requests for County records related to this Agreement in a timely way.
- 3.2.5. Maintain and preserve records in accordance with applicable federal, state and county retention schedules.
- 3.2.6. Upon receipt by the County of a public records disclosure request under Chapter 42.56 RCW that would require disclosure of County or District public records related to this Agreement, advise the Clerk of the Board and the District Executive Director of such request as soon as possible, but in any event within two (2) business days. In consultation with the District, the County is authorized to respond to such requests on behalf of the District.
- 3.2.7. Make concerted efforts to apply for and obtain federal, state and local grants and matching funds.
- 3.2.8. Notify the District within ten (10) business days after submitting an application for federal, state or local grants and matching funds.
- 3.2.9. Notwithstanding anything to the contrary herein, if there is a threat of imminent harm to property or public safety, respond on behalf of the District and immediately inform the District of emergency actions taken, or which may be required.

- 3.2.10. Provide services of attorneys in County Prosecuting Attorney's Office as necessary to carry out the annual work program and this Agreement.
- 3.2.11.Comply with all applicable policies, laws, rules and regulations, obtain all applicable permits, certifications and accreditations, and prepare and submit all applicable plans, reports and any other required information to regulatory agencies and bodies.
- 3.3. If requested by the District, within available resources, the County shall provide within the time and in the manner requested by the District, the following services and tasks:
  - 3.3.1. Provide other support services to the District that are similar to those provided by County agencies to the County Council, including, but not limited to policy analysis of legislation and budgets, technical services, briefings, presentations, and other information and communications.
  - 3.3.2. Provide additional technical expertise and personnel that is not otherwise required by this Agreement.
  - 3.3.3. Provide copies of all contracts signed by the County in carrying out the annual budget, the annual work program and this Agreement.
  - 3.3.4. Provide management and administrative services relating to matching funds and grants.
- 3.4. The County will consult regularly with, obtain input from and receive the advice of the District Executive Director on all policy matters.

- 3.5. The County may modify or reprioritize capital projects in the District's approved annual work program, provided the following process is followed:
  - 3.5.1. Any projects that are substituted for projects on the approved annual work program must be on the District's approved six-year capital improvement program list.
  - 3.5.2. The County shall notify the District Executive Director in writing of the modification or reprioritization, providing background information on, and the rationale for, the proposed change, including estimated applicable costs.
  - 3.5.3. The County is authorized to implement the proposed change unless the District Executive Director objects to the change or requests more information within fourteen (14) calendar days after the notice is provided to the Executive Director. If the Executive Director objects to the change or requests more information, the proposed change shall be approved only upon acceptance by the District Board of Supervisors.

# 4. <u>Procedure for Preparation of Budget and Work Program.</u>

Not later than August 31 of each year, the County shall prepare and submit for review by the District Executive Director a proposed annual budget and proposed annual work program for the subsequent calendar year. The County shall provide supporting information for the proposed budget and work program, in a form and in such detail as is required by District Executive Director. The District Executive

Director may request additional information, which the County shall provide in a timely manner, but not more than five (5) business days after receiving the request. However, the District Executive Director shall grant reasonable extensions of time based on the circumstances, and may request expedited responses with respect to needed financial information.

#### 5. <u>Monitoring and Adjusting Budget and Work Program.</u>

- 5.1. Through the invoicing process and reporting requirements of this Agreement, the County shall keep the District apprised of any foreseeable need to amend the annual budget or annual work program.
- 5.2. If the County believes that the cost of complying with or carrying out the annual work program will likely exceed the annual budget, the County shall as soon as possible prepare and submit to District Executive Director a proposed amendment to the annual budget or annual work program.
- 5.3. The District shall consider the proposed amendment in a timely manner, and may by resolution amend the budget and/or provide for adjustments to the work program or six-year capital improvement program.

#### 6. County Engineer.

6.1. The Director of the Department of Natural Resources and Parks shall identify and appoint a person who shall act as and carry out the duties of the county engineer under RCW 86.15.060. Prior to the appointment of any county engineer, the Director of the Department of Natural Resources and Parks shall provide the District Executive Committee or its designee with an opportunity to meet the

candidate and provide input on the appointment. The Director of the Department of Natural Resources and Parks shall notify the Clerk of the District and the District Executive Director in writing of any resignation or termination of the person serving as the county engineer.

6.2. The parties agree that the county engineer under RCW 86.15.060 is not the county road engineer under Chapter 36.80 RCW. The scope of the county engineer's duties and responsibilities shall be consistent with the provisions of RCW 86.15.060 and all resolutions adopted by the District.

#### 7. Public Outreach and Media Relations.

To ensure clear and consistent communications with the public and outside agencies, all communications with the public and outside agencies regarding District and County flood protection services and programs shall be handled in accordance with communications protocols developed by the District and the County.

#### 8. <u>Authority to Execute Agreements.</u>

- 8.1. The District Board of Supervisors shall authorize and approve all agreements to which the District is a party. However, the Director of the Department of Natural Resources and Parks is authorized to sign the following agreements on behalf of the District without further authorization and approval of the District Board of Supervisors:
  - 8.1.1. Agreements with third parties related to the design, acquisition, construction, and construction management of flood protection capital projects that are included in an annual work program or the approved six-year capital

improvement program, including without limitation, any agreement or real property document required by the U.S. Army Corps of Engineers or by any federal, state or local agency.

- 8.1.2. Agreements with the FEMA for reconstruction or repair of flood protection capital projects.
- 8.1.3. Agreements for the award of grants or matching funds that are consistent with applications for such grants or matching funds.
- 8.2. The Director of the Department of Natural Resources and Parks is hereby authorized to execute any agreements in the name of the County that are necessary or convenient to carry out the annual work program of the District.

#### 9. <u>Property Ownership</u>.

All real property and interests therein acquired either by the District or the County on behalf of the District shall be in the name of the District, except as follows:

- 9.1. The real property and interests therein shall be in the name of the County and/or the District if required by any federal or state agency pursuant to applicable laws, regulations or agreements.
- 9.2. Before and during design, construction and construction management of a flood protection capital project included within the work program, the County shall acquire in its name only all real property and interests therein that are necessary for the project, unless provided otherwise by any federal or state agency pursuant to applicable laws, regulations or agreements. After County acceptance of such capital

project, the County and the District shall enter into appropriate real property documents to transfer ownership and control of such real property to the District.

9.3. Any real property acquired by the County pursuant to any County buyout and relocation program shall be in the name of the County. Following the County's acquisition of such property, the County and the District shall enter into appropriate real property documents to transfer ownership and control of such real property to the District.

#### 10. Invoices.

- 10.1. The County shall submit invoices for the cost of services and capital costs provided to the District to implement the annual work program. The invoices shall include all actual costs, plus administrative overhead costs, and shall be in a form and shall contain information and data substantially in the form of Attachment B to this Agreement.
- 10.2. The County will submit invoices within thirty (30) days after the closing of the billing month in which the services are provided. The District will review and pay the invoice within thirty (30) days of receipt in accordance with procedures established by District resolution, if any. However, the District may postpone payment of the invoice if it is inaccurate or incomplete, in the opinion of the District. The District shall notify the County of any inaccurateness or incompleteness within thirty (30) days of receipt of the invoice. The County shall provide the requested information within thirty (30) days of the request. The District shall pay an invoice within thirty (30) days of the submittal of all requested information, and invoices that are not paid within that time are subject to statutorily-authorized interest charges.
- 10.3. Invoices shall be submitted to the District Executive Director and payments shall be made via inter-fund transfer consistent with instructions from the County.

#### 11. Performance Reports.

- 11.1. The County shall submit financial and performance reports to the District by April 30 and October 31 of each year, outlining and summarizing implementation of the annual work program, in a form and general content approved by the District Executive Director. The reports shall generally reflect County budgetary practices and BARS requirements.
- 11.2. The County shall submit a calendar year final report by April 30 of each year, which may be combined with the April 30 financial and performance report required under Section 11.1, above.
- 11.3. Reports shall be submitted to the District Executive Director and shall include any modification or reprioritization of capital projects in the District's annual work program.
- 11.4. The Parties may agree to include additional performance measures in the reports to ensure accountability to the public.
- 11.5. In addition to the reports described in this Section 11, the Director of the Water and Land Resources Division shall provide the District Executive Director with a brief monthly summary highlighting County activities under this Agreement.

#### 12. <u>Legal Relations</u>.

- 12.1. <u>No Third Party Rights</u>. It is understood and agreed that this Agreement is solely for the benefit of the Parties and gives no right to any other Party or person.
- 12.2. <u>No Joint Venture</u>. No joint venture or partnership is formed as a result of this Agreement. No employees or agents of one Party or any of its contractors or

subcontractors shall be deemed, or represent themselves to be, employees of the other Party.

- 12.3. <u>Independent Contractor</u>. The County is an independent contractor with respect to the services and responsibilities under this Agreement, and nothing in this Agreement shall be considered to create the relationship of employer and employee between the Parties.
- 12.4. <u>Jurisdiction and Venue</u>. This Agreement shall be interpreted in accordance with the laws of the State of Washington. The Superior Court of King County, Washington, shall have exclusive jurisdiction and venue over any legal action arising under this Agreement.
- 12.5. <u>Indemnification</u>. To the maximum extent permitted by law, each Party shall defend, indemnify and hold harmless the other Party, and all of its officials, employees, principals and agents, from any and all claims, demands, suits, actions, fines, penalties, and liability of any kind, including injuries to persons or damages to property, which arise out of or are related to any negligent acts, errors, omissions of the indemnifying Party and its contractors, agents, employees and representatives in performing obligations under this Agreement. However, if any such damages and injuries to persons or property are caused by or result from the concurrent negligence of the District or its contractors, employees, agents, or representatives, and the County or its contractor or employees, agents, or representatives, each Party's obligation hereunder applies only to the extent of the negligence of such Party or its contractor or employees, agents, or representatives.

The foregoing indemnity is specifically and expressly intended to constitute a waiver of each Party's immunity under industrial insurance, Title 51 RCW, as respects the other Party only, and only to the extent necessary to provide the indemnified Party with a full and complete indemnity of claims made by the indemnitor's employees. This waiver has been mutually negotiated.

12.6. <u>Prevailing Party Costs</u>. In the event either Party incurs attorney fees, costs or other legal expenses to enforce the provisions of this Agreement against the other Party, all such fees, costs and expenses shall be recoverable by the prevailing Party.

#### 12.7. Insurance.

12.7.1.The County and the District shall provide insurance or self-insurance. The District authorizes and directs the County to procure and maintain insurance on the District's behalf at the District's expense, including without limitation, the additional costs in insurance charges and costs incurred by the County for the District to be included as an insured in the County's self-insurance program and/or any insurance coverage provided for the benefit of the District, its Board of Supervisors, officers, employees, agents and volunteers. The County shall endeavor to procure insurance for the District with the same coverage and in the same amounts as is provided generally by the County for its officers, employees and agents. Prior to securing insurance for the District, the County shall consult with the District Executive Director.

- 12.7.2. The County is authorized to investigate and review all claims against the District, including associated allocated expense payments, which are not covered by insurance or self-insurance or which are within the self-insurance retention or deductible. After investigation and review, the County shall consult with the District Executive Director regarding the claim. The Board of Supervisors shall approve the payment of any authorized claim, and nothing in this Agreement shall be construed as requiring the County to pay any claims against the District.
- 12.7.3. Nothing in this Agreement shall be construed to modify or amend any provision of an insurance policy or any coverage through a self-insurance or joint insurance program. If there is a conflict between this Agreement and the provisions of any such policies or coverage, the provisions of any such policies or coverage shall control.
- 12.8. <u>Survival</u>. The provisions of Sections 12.4, 12.5, and 12.6 shall survive any termination of this Agreement.

#### 13. <u>Duration, Performance and Termination.</u>

- 13.1. This Agreement shall take effect January 1, 2009 and shall remain in effect through December 31, 2010. The District may extend this Agreement once for two (2) years by sending notice to the County of its intention to extend the Agreement on or before September 30, 2010.
- 13.2. If a Party fails to perform its obligations as described in this Agreement, the Parties shall use their good faith efforts to resolve the failure to

perform using the dispute resolution process of section 14. If the dispute cannot be remedied, either Party may elect to terminate this Agreement by giving written notice of termination to the other Party not less than one hundred and eighty (180) days prior to the effective date of the termination; except that if the District fails to make payment as required in this Agreement, the County may provide written notice of termination not less than thirty (30) days prior to the effective date of termination.

13.3. Failure to require full and timely performance of any provision of this Agreement shall not waive the right to insist upon complete and timely performance thereafter.

#### 14. <u>Dispute Resolution</u>.

- 14.1. Should a dispute arise between the Parties out of or related to this Agreement, a Party will notify the other Party in writing of any dispute that the respective Party believes should be resolved. The Parties will communicate regularly and commit to act in good faith to resolve the dispute.
- 14.2. If the dispute cannot be remedied within thirty (30) days after written notice, the Parties shall consider submitting the matter to a mutually agreed upon non-binding mediator. The Parties shall share equally in the cost of the mediator.

#### 15. Administration and Identification of Contacts.

15.1. This Agreement shall be administered by the District Executive Director and the Director of the Water and Land Resources Division of the Department of Natural Resources and Parks, who shall be contacted as follows:

Executive Director
King County Flood Control District

c/o Lund Consulting, Inc. 411 University Street, Suite 1200 Seattle, WA 98101

Director of WLRD King County Dept. of Natural Resources and Parks 201 South Jackson Street, Suite 600 Seattle, WA 98104

#### 16. General Provisions.

- 16.1. Entire Agreement. This Agreement, including its attachments, is a complete expression of its terms, and any oral representation or understandings not incorporated in this Agreement are excluded. Any modification, amendment, or clarification to this Agreement shall be in writing and signed by both Parties. Copies of such shall be attached to this Agreement and by this reference are made a part of this Agreement as though full set forth in this Agreement.
- 16.2. <u>Severability</u>. If any provisions of this Agreement are held invalid by a court of competent jurisdiction, the remainder of this Agreement shall not be affected thereby if such remainder would then continue to serve the purposes and objectives originally contemplated.
- 16.3. Force Majeure. Notwithstanding anything contained in this Agreement to the contrary, neither Party shall be deemed in default hereunder nor liable for damages arising from its failure to perform any duty or obligation hereunder if such delay is due to causes beyond the Party's reasonable control, including, but not limited to acts of God, acts of civil or military authorities (including failure of civil authorities to timely process permits or provide utilities), fires, floods, windstorms,

earthquakes, strikes or labor disturbances, civil commotion, delays in transportation, governmental delays or war.

16.4. <u>Authorization</u>. This Agreement has been duly authorized by King County Ordinance and King County Flood Control Zone District Resolution.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed.

KING COUNTY		
Ron Sims	Dated	
King County Executive		
Approved as to Form:		
Dan Satterberg		
King County Prosecuting Attorney		
By:		
Senior Deputy Prosecuting Attorney	Dated	

## KING COUNTY FLOOD CONTROL ZONE DISTRICT

Julia Patterson	Dated	
Chair of the Board of Supervisors		
Approved as to Form:		
By:		
Rod P. Kaseguma	Dated	
Inslee Best Doezie & Ryder P.S.		

# Attachment A Standard Overhead Methodologies

Cost Pool	Methodology
General Government	2007 Adjusted Operating Expenditures*
Personnel	2009 Proposed FTEs
Bus Pass	2009 Proposed FTEs
Ombudsman	2007 Complaints
Asset Management	2007 Asset Value
Mail Service	2009 Proposed FTEs
Auditor	2007 ARMS/IBIS Transactions
Office of Management and Budget	2007 Adjusted Operating Expenditures
Business Relations and Economic Development	2007 Adjusted Operating Expenditures
Building Occupancy	2007 Square Footage
Records Management	2009 Proposed FTEs
Emergency Services	2009 Proposed FTEs

<sup>\*</sup> Excludes executive, councilmembers and staff salaries

Flood Control District

10/28/2008

#### Summary FCD Billing for September 2008 - Operating

ANNUAL MAINTENANCE, FACILITY ASSESSMENTS	s	120,715.55
FLD HAZARD PLANNING, GRANTS, OUTREACH	s	13,691.77
FLD HAZARD STUDIES, MAPS, TECHNICAL SERVICES	\$	25,150.22
FLOOD PREPARATION, FLOOD WARNING CENTER, POST FLOOD ACTIVITIES	\$	22,120.40
PROGRAM MANAGEMENT, SUPERVISION, FINANCE, BUDGET	\$	164,299.54
PROGRAM IMPLEMENTATION	\$	64,619.89
TRANSFERS AND CHARGES TO CAPITAL AND OTHER PROJECTS	\$	52,604.14
Total Expenditures:	\$	463,201.51

Account Class Monthly Billing for FCD Operating Based on September 2008 Billing Detail

		Annual Maint,	Fld Hazard			Prog Mgmt,	Program	Transfers &	
Account		Facility	Plan, Grants,	Fid Hazard Maps,	Flood Prep,	Supv, Finance,	implementa-	Charges to	
Class	Class Description	Assessments	Outreach	Tech.Srvs	FWC	Budget	tion	Capital	Totals
51100	Salaries & Benefits	12,926.81	8,854.37	17,735.45	934.67	46,987.15	55,568.44	63,515.01	206,519.90
52000	Supplies	661.55	•	•	•	209.37	•	•	870.92
23000	Services	101,708.88	2,594.16	556.34	20,777.50	4,434.82	2,375.78	•	132,447.48
22000	Interdpt Charges	7,837.86	2,480.84	10,472.43	408.23	11,902.54	7,672.44	,	40,774.34
26000	Capital Purchases	•	•	•	•	•		•	•
28000	Intercounty Transfers	•		•	•	100,765.66	•		100,765.66
29000	59000 Overhead Contra	(2,419.55)	(237.60)	(3,614.00)		•	(994.77)	(10,910.87)	(18,176.79)
	Totals	120,715.55	13,691.77	25,150.22	22,120.40	164,299.54	64,619.89	52,604.14	463,201.51

Annual Maintenance & Facility Assessments: Including vegetation maintenance, access road maintenance, facility assessment and repairs, sediment management and coordinating in-stream hazard response

Flood Hazard Plan, Grants, Outreach:. Developing grant applications, monitoring repeatative loss properties, public outreach for projects and education efforts, community rating system coordination Flood Hazard Maps & Technical Services: Develop technical information to characterize and map flood risks — including channel migration zone, gravel removal, risk assessments, and hydraulic modeling

Flood Warning Center and Flood Preparedness. Educating citizens on flood hazards and emergency preparedness and operating the flood warning center during high flood stages

Program Management: Provide supervision, budgeting, and administrative services

Program Implementation: Working with internal basin teams and external basin technical coordinating committee and advisory committees to develop recommended six year-CIP

Transfer & Charges to Capital: Project design, construction and management of scope, feasibility, acquisition, design and permitting, project monitoring, and environmental and

# Summary FCD Billing for September 2008 - CIP

FL0000	SKYKOMISH/MILLER RIVERS	\$	5,272.37
FL1000	UPPER SNOQUALMIE RIVER	\$	58,099.03
FL2000	LOWER SNOQUALMIE RIVER	\$	6,724.55
FL3000	TOLT RIVER	\$	771.59
FL4000	RAGING RIVER	\$	3,702.14
FL5000	SAMMAMISH RIVER	\$	-
FL6000	ISSAQUAH CREEK	\$	1,076.31
FL7000	CEDAR RIVER	\$	397,651.88
FL8000	GREEN RIVER	\$	26,199.84
FL9000	WHITE RIVER	\$	70,137.80
FLM000	COUNTYWIDE MONITORING/MAINTENANCE	\$	
TOTAL		Ŀ	569,635.51

\$569,635.51 \$1,425.73 29.86 \$52.46 \$6,064.03 \$105.87 \$751.59 \$686.87 \$26,506,55 \$34,692.97 \$7,503.40 \$416.66 \$6,069.70 \$1,621.53 \$1,621.53 \$1,621.63 \$2,487.06 \$625.83 \$280.70 \$320.00 \$224.53 \$863.02 \$3,765.49 \$717.36 \$862.36 \$598.34 \$6,342.73 \$27.65 \$27.65 \$771.69 \$52.47 \$1,836.36 \$365.84 \$18,945.35 \$493.68 \$1,073.39 \$1,233.88 \$481.58 \$1,009.92 \$70,053.89 \$9,415.61 \$1,328.82 80.03 03 8.9 \$0.00 \$30,781.39 \$291,943.75 \$1,049.56 \$387.59 526,995.16 \$412.00 \$412.00 \$180.77 \$411,807.60 \$1,106.21 \$6,294.21 \$3,169.59 \$1,333.94 \$207.00 \$724.46 \$827.93 \$827.93 \$661.93 \$2,176.07 \$165,58 \$124.20 \$2,360.68 \$3,202.09 \$2,475.99 \$1,028.23 \$28,510.04 \$2,390.87 \$3,040.48 \$15,641.88 \$10,018.74 SKYKOMISHVMILLER RIVERS FLOOD IMILER RIVER HOUSE BUYOUT
SKYKOMISHVMILLER RIVERS FLOOD TIMBERLANE VILLAGE BUYOUT
UPPER SNOCJALAMIE RIVER FLOOD MESON THORSON ELLS
UPPER SNOCJALAMIE RIVER FLOOD MESON THORSON ELLS
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RAGING RIVER FLOOD AREA BUYOUT
RAGING RIVER FLOOD PRESTON HAND ACCIDA RIVER FLOOD PROFICE TION
CEDAR RIVER FLOOD CEDAR REVET BENED CEDAR RIVER FLOOD CEDAR RAPIDS LEVEE SETBACK
CEDAR RIVER FLOOD CEDAR RAPIDS LEVEE
GEDAR RIVER FLOOD CEDAR RAPIDS LEVEE
GEDAR RIVER FLOOD CEDAR RAPIDS LEVEE
GEDAR RIVER FLOOD CEDAR RAPIDS LEVEE
GREEN RIVER FLOOD CEDAR RAPER COLF COURSE FEMAN
GREEN RIVER FLOOD CEDAR RAPER FLOOD CEDAR RAPIDS LEVEE
GREEN RIVER FLOOD CEDAR RAPER FLOOD CEDAR RAPIDS LEVEE
GREEN RIVER FLOOD CEDAR RAPIDS LE FUND 3571 TOTAL

Flood District Capital Expenditures - September 2008

# **APPENDIX E:**

King County Flood Control District Resources

# APPENDIX E: King County Flood Control District Resources

#### **King County Flood Control District**

http://www.kingcountyfloodcontrol.org/

#### **Metropolitan King County Council**

http://www.kingcounty.gov/council.aspx

#### King County Department of Natural Resources and Parks

http://www.kingcounty.gov/environment/dnrp.aspx

#### 2006 King County Flood Hazard Management Plan

http://www.kingcounty.gov/environment/waterandland/flooding/documents/flood-hazard-management-plan.aspx

#### King County Flood Warning System

www.kingcounty.gov/flood

#### **Community Rating System**

http://www.kingcounty.gov/environment/waterandland/flooding/community-rating-system.aspx

#### King County Flood Warning Hotline

206-296-8200 or 800-945-9263